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# Potato Development Work in Wisconsin

Special Bulletin No. 2



One Result of Potato Improvement Work

Pure seed stock from healthy  
fields is now available in every  
commercial potato section of  
Wisconsin

Issued by the

**Wisconsin Potato Growers Assn.**

March, 1916

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**OUR FERTILIZERS EXCLUSIVELY**

no other dressing of any kind being used, turned out an average yield of 331.3 bushels per acre.

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# **Potato Development Work in Wisconsin**

## **Special Bulletin No. 2**

Issued by the

## **Wisconsin Potato Growers Association**

The Wisconsin Potato Growers Association is again pleased to take this means, in the Bulletin here submitted, to present to the potato industry of the state

**A Summary of the Annual Convention Program**

**A Collection of Views of Convention Exhibits**

All illustrating the features of Association work now under development in the state.

**March, 1916**

# **Wisconsin Potato Growers Association**

## **OFFICERS**

President—J. W. Hicks, Prentice

Vice-President—O. C. Woodard, Weyauwega

Sec'y-Treasurer—J. G. Milward, Madison

## **1916 Convention Announcement**

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As this bulletin goes to press, the Executive Committee in conference with Eau Claire Committees has decided definitely upon the dates of the Fifth Annual Convention

**To be held at Eau Claire**

**Nov. 21-24, 1916**

## Review of Convention Program Held at Marinette, Nov. 17-19, 1915

Space does not permit here to adequately recognize the service rendered by Marinette city and county interests during a season's co-operation in preparation for the state convention.



RALPH SKIDMORE  
Marinette, Wis.

Complete organization of every department was effected in the interest of entertainment and comfort of delegates and in the business-like management of convention details.

The Thursday evening entertainment program at the opera house was arranged by the Marinette Entertainment committee. Chairman H. P. Goldman presided.

A very high class musical program was rendered by local people after which Hon. Carl Vrooman, Assistant Secretary United States Department of Agriculture delivered the address of the evening on "The Business Side of Farming."

As another example of how the convention was received at Marinette, we also acknowledge the courtesy of the Marinette Eagle Star in printing a special potato issue devoted exclusively to the convention and special articles on potato growing.

The Marinette County School of Agriculture and Domestic Science, The Marinette Woman's Club, Mayor Fisher and city officials, were all contributing forces to the success of the convention.

The chairmen on committees were: on executive committee, Prof. H. M. Olson; on entertainment committee, Mr. H. P. Goldman; on decoration committee, M. J. Culnan; on reception committee, John Leason.

Throughout all arrangements for the convention the state

association worked directly with Mr. Ralph Skidmore of the Skidmore Land Company and to him and his associates recognition is especially due for the results mentioned above.

## The Results of the Fourth Annual Convention held at Marinette

A Review of the Potato Convention and Exhibit Submitted by a Marinette Writer.

HOWARD I. WOOD  
Marinette, Wis.

It is still too early to be able to judge the full effects in this locality of the holding of the 1915 show and convention of the Wisconsin Potato Growers' Association at Marinette, but many

effects are already apparent. First and foremost, a larger number of Marinette county farmers will endeavor henceforth to raise potatoes which measure up in all particulars to the standard set by the state association. Indications also point to a very large increase in the acreage of certified seed potatoes.



HOWARD I. WOOD  
Marinette, Wis.

In Marinette county as in most other potato localities the crop has been gambled with in the past. Take for instance a season like the present with the price of potatoes very high. Ordinarily that would mean the acreage next year would be doubled. Given a favorable growing year, with a minimum of trouble with

potato diseases, and there would be such a yield that prices would possibly be tumbled to twenty cents per bushel or less, as

was the case a few years ago when a big yield season followed a year of high prices.

But I don't think, even with the present high prices, that farmers in this district will rush into a greatly increased acreage of potatoes for next season. One progressive farmer who attended nearly every session of the state convention told me that the best farmers felt they would devote about the same acreage to the crop as last season, but they would endeavor to increase the yield by better methods on the same acreage. They would pay more attention, he said, to proper seed, to properly preparing the seed bed, to the use of fertilizer, to cultural methods and to spraying to prevent blight. He held that if prices were low next year the farmer would not have sacrificed any additional acreage for the crop, and if prices were high, he would have a higher yield from the same acreage as the result of better methods.

I think it is safe to say the number of varieties in any one locality will be reduced as a result of the convention. Farmers are now fairly well convinced of the desirability of growing pure-bred stock, and of the marketing advantages of growing only two or three varieties in one locality.

So far as certified seed is concerned the farmers as a result of the annual show have come to realize that certified seed always brings a premium over the price for table stock, and that there is little danger of the seed market being flooded—not with certified seed, at least. They have reasoned that growing certified seed means a selling price which will yield a fair profit every year and if prices are abnormally high, they will be higher for certified seed than for the best table stock. Raising certified seed, they believe, is just another step in removing the gambling element so far as possible in raising and selling potatoes.

More farmers in the future will make potatoes one of the crops of a good rotation plan, figuring their loss or profit over a period of three to five years, instead of one year. If a five year period of raising potatoes as part of a rotation plan shows a good profit they will see the desirability of continuing on that plan.

We have endeavored in this locality to follow up the good work of the convention by calling attention in the local press to various points brought out by the speakers and exhibitors, and we believe this plan is making available even to farmers who could not attend the show, the benefits of that meeting. We look,



therefore, for extensive improvement in many ways in potato growing in this locality next year, and each succeeding year.

This would not be complete without a word concerning what the potato show has meant to the city of Marinette. It was the first time the city had been thoroughly worked up to take part as a whole in a show or convention of an agricultural nature. Before the day the show opened everyone in Marinette was talking potatoes, and they continued to talk potatoes—cultural methods, marketing, containers, disease-control, etc.,—for several weeks after the convention ended.

The effect of this was to stimulate a very healthy interest among Marinette business men in the welfare of the farmers, and it is easier today than ever before to interest the town business people in any project designed to further agricultural development in Marinette county.



D. S. BULLOCK  
Marinette County School of  
Agriculture



JOSEPH FISHER  
Mayor of Marinette

## President's Annual Address

By J. W. HICKS, Prentice, Wis.

President of the Wisconsin Potato Growers' Association.

One of the first definite results of a number of years of preliminary work by the Horticultural Department of the University of Wisconsin, having for its ultimate object the placing of the rapidly developing potato industry of the state upon a better business basis, was the organization at Waupaca, on the 14th day of November, 1912, of the Wisconsin Potato Growers' Association.



J. W. HICKS  
President Wisconsin Potato Growers'  
Assn.

One of the features of the work of the association provided by its constitution is an annual convention at which its progressive members compete in an exposition demonstrating the progress made from year to year and in a program dealing with some of the important and perplexing problems involved in the growing of better potatoes.

And as we today open this our fourth annual convention which, both in point of character and quantity of exhibits in the armory across the street and the program to be given in this beautiful hall, far exceeds any former efforts, I wish on behalf of the executive committee, to thank the loyal members of this association for their effective work in assembling this splendid exhibit of Wisconsin potatoes; and I wish to congratulate the city of Marinette on having a body of hustling business men whose tireless efforts have made this great convention possible.

When Marinette was selected as the convention city for 1915 it was with the understanding that she would do certain things

contributing to the success of the undertaking. All of her promises have been more than fulfilled and so many other generous acts have been performed along the same line that we shall always feel under obligation to Marinette and her good people. At this time, I wish to express our appreciation of her genuine hospitality and her most cordial and efficient assistance.

Our program is so full of good things that I shall take but a few moments of your time just for the purpose of calling your attention to the relation of the exhibit in the armory and the program, to the past and future work of the association.

The objects of this association, as set forth in its constitution, are as follows:

1. To promote the raising of pure varieties of potatoes for all commercial purposes.
2. To give special attention to seed improvement and dissemination, especially in relation to standard commercial varieties.
3. To improve sorting and grading methods both on the farm and at loading stations.
4. To promote a community plan for raising desirable varieties and to encourage the elimination of undesirable commercial types.
5. To assist in maintaining proper cultural practices in relation to the maintenance of fertility and to promote the extension of the industry upon the new soils of the state in accordance with the above required standards.
6. To assist in the dissemination of information on the disease and insect pests of the potato; to promote all available means of control and to encourage such practical inspection as shall prevent the introducing or spread of potato pests in Wisconsin.

The chief activity of the association during the first year of its history was to lay the foundation for the elimination of unnecessary and undesirable varieties and the multitudes of meaningless and needless varietal names applied in different parts of the state to the few best standard varieties and in locating and inspecting the best fields of the standard varieties that the crops from them might be used in the dissemination of pure seed.

This work carried on by the secretary of the association in cooperation with some of the members, demonstrated by the exhibit assembled at Rhinelander at the annual convention in November, 1913, that Wisconsin can grow as good seed potatoes as the best.

At the Grand Rapids convention the executive committee was

instructed to co-operate with the adjoining states, with the growers and the various commercial interests in establishing a definite system of sorting and grading commercial potatoes to well defined standard market grades.



O. C. WOODARD  
Weyauwega  
Elected Vice President

Your executive committee has spent a considerable time and thought upon this matter, have conferred with representatives from neighboring states, with growers and dealers, but have deemed it wise to make haste slowly in this most important step and to still further confer, investigate and consider the matter at this meeting before taking definite action.

The actual conditions at loading stations and at Chicago are demonstrated in the armory by samples taken from cars on the track at Chicago, from warehouses and stores. Samples of culls that are *always sorted out and thrown away* in Chicago are also

shown in the exposition and to all of these I would invite your most careful and thoughtful study and attention to the end that the grower may better understand some of the problems of the dealer and the enormous waste and loss to the farmers caused by the present lack of proper sorting at the loading station.

The present system of annually shipping tens of thousands of bushels of undersized, scabby, cut, crooked, bruised, rotten or frozen potatoes is the direct cause of enormous economic waste and untold annoyance to every one excepting only the poor families in Chicago who gather up this rejected stock on which the grower has in addition to growing and hauling to market paid the freight to the city and delivered free along the tracks.

I am fully convinced that nothing will so quickly improve the marketing system as the prompt discontinuation of this entirely indefensible and wasteful practice.

In conclusion I would say that we have before us not simply three days of pleasure and entertainment, but three of the most valuable days of the year for every one who will but hear, accept and practice the gospel of better potatoes for and from Wisconsin as expounded during this meeting.

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## A Letter from Hon. Carl Vrooman, Asst. Secretary, U. S. Department of Agriculture

MR. J. G. MILWARD, Secretary Wisconsin Potato Growers' Association, Madison, Wisconsin.

Dear Mr. Milward: Your letter of February 19 came a few days ago and it is needless to tell you that I am very glad to give you a statement regarding the potato development work in your state.



CARL VROOMAN  
Assistant Secretary  
U. S. Department of Agriculture

The community development plan for the uplift of the potato industry of Wisconsin, which your Potato Growers' Association is encouraging, is one which eventually must result in much good to the state. Your plan, as I understand it, is to encourage the growing for market purposes of one or at most but two varieties in a community.

The object of such a movement is to standardize the potato product of the community to such an extent that buyers will be attracted to these community centers because, at these points, it will be possible for them to purchase a single variety in carload lots.

In reducing the number of varieties grown to one or two it makes it possible for the grower to become more intimately ac-

quainted with the cultural requirements of the variety that he is handling, thereby enabling him to provide, as nearly as it is possible, the optimum conditions for its development.

The financial benefits to be derived by the grower from such a movement are numerous. In the first place, it does away with all unnecessary waste of effort involved in growing several varieties. Secondly, by confining himself to one variety he is enabled to give it better attention and thereby to produce a maximum crop. Thirdly, when a given community grows but one commercial variety of recognized merit, it is a much easier proposition to sell the product than where a half-dozen or more varieties are being commercially grown. The buyer is not only attracted to the one variety idea, but he is also generally willing to pay a premium on such stock.

When your growers are willing to go one step farther and adopt a community system of grading similar to that adopted by the western fruit growers, they will then, and not till then, realize the benefits accruing from the community plan of potato growing.

Very sincerely yours,

CARL VROOMAN,

Assistant Secretary of Agriculture.

## Successful Methods in Growing Potatoes

By E. S. BRIGHAM

Commissioner of Agriculture for Vermont.

The industry of potato growing which claims our attention today has been greatly changed in my memory by three factors: machinery, transportation, and science. By the invention of machinery large areas of adaptable soil may be tilled with a great reduction of labor cost, by the development of cheap transportation potatoes may be shipped long distances to more favorable markets, and by the development of scientific knowledge regarding the plant and its enemies we are able to do those things intelligently which will encourage the growth of the one and protect it from the ravages of the other. We may say, therefore, that these three factors have made possible the commercial potato industry as we know it today.



E. S. BRIGHAM  
Commissioner of Agriculture for  
Vermont

It is true that the potato is used as one of the gambling crops of the American farmer in that many enter the business through the attraction of large prices, with no intention of following what are called the best methods of potato growing, and it is true that such persons succeed occasionally, but the farmer who gives the potato crop a definite place in his rotation and who intends to stay in the business year after year will find the largest profits only by making use of the most up-to-date machinery, a most careful study of marketing conditions and by summoning to his assistance all the facts which has been learned about this crop.

Methods of potato culture may differ somewhat under different

circumstances of soil and climate, but their fundamental principles are the same. I would like, therefore, to discuss with you in the time allotted to me some methods which have been found successful in growing potatoes under our conditions in the east.

*The Seed.*—As with all other farm crops the foundation of success in potato growing is the seed. However strong the other links in the chain of operations may be, if this one be weak the results from the start have been doomed to be poor.

While new varieties of potatoes are originated by propagation from the true seed of the potato found in the seed ball, yet the crop is commonly propagated by the planting of cuttings of the eyes or buds. The origination of new varieties requires careful painstaking work, is too difficult for the practical grower and should be left to the scientist, but the improvement of seed by the selection of the best individual tubers within the variety which he is growing offers to any farmer a means whereby, with the exercise of little care, he may at least maintain if not improve the productivity of the variety which he is growing.

The potato grower may do this by the practice of the tuber unit method, which consists in planting the four pieces of an individual tuber in such a way that the crop produced may be kept by itself, so that it can be examined and weighed. Another method which he may use is that of selecting at digging time the hills which throw a fair number of nice even-sized potatoes of good type.

In five years' work with the tuber unit method I have been impressed with its value as a means of eliminating from the seed those tubers which have low vitality, but I am coming to believe that, in order to maintain the productiveness of even high yielding stock, developed from the best yielding tubers, we must practice in addition hill selection. Inferior plants, the result of disease, may be eliminated in this way. It is my opinion that it will pay any potato grower to dig by hand a portion of his field and select carefully the best yielding hills for seed. Given such stock as this, the next problem is to keep it during the winter period so that its vitality may be maintained.

This may be accomplished by burying the tubers under successive layers of straw and dirt in the open field or it may be accomplished by holding the seed in a cool cellar or storehouse until the sprouts start in the spring. It is then our practice to disinfect for scab by soaking the seed for two hours in a solution



of one pint of formaldehyde to 30 gallons of water, and then to spread in rather a thin layer upon the floor of the potato house or the barn and expose to light. Sprouting under these conditions is retarded and the sprouts which do start are so strong that they are not easily broken off by subsequent handling.

*Preparation of the Soil.*—The preparation of the soil for the potato crop should begin with the growing of clover or some leguminous crop in the rotation the year before the land is planted in potatoes. If this is impossible a fall sown cover crop like rape or rye to be turned under will add humus, if not fertility, to the soil.

Plowing should be at least eight inches deep because room must be provided in the soil for the tubers as well as for the roots. Whether the plowing should be done in the fall or in the spring will depend upon circumstances. Personally I would prefer to plow a tough sod infested with weeds and insects in the fall because the sod will have longer in which to decay, the insects will be destroyed by freezing and a longer battle may be waged against the weeds by repeated harrowings in the spring before planting. With good clean land and a clover sod, better results will probably be obtained by spring plowing. The aim of soil preparation is to obtain a good deep mellow seed bed in which to plant the seed and no pains should be spared to secure it. Harrowings should be deep and sufficient to secure such a seed bed.

*Cutting the Seed and Planting.*—A survey of the potato fields of the United States would probably show an average of not over 60 per cent of a perfect stand. This is not good practice and potato growers should adopt such methods as would effect an improvement. A good stand of potatoes may be secured by planting in every hill a good sound seed piece, having at least one good strong eye. Under our conditions, with a plentiful supply of labor, we can secure approximately a perfect stand in this way. The seed, if you remember, is spread out in a thin layer and allowed to sprout slightly under exposure to the light. The short tough green sprouts which push out under these conditions give an expert cutter an inkling of the vitality of a seed piece. If every seed piece is cut with at least one good strong vigorous eye, half the battle has been won. It is our practice to begin cutting at the stem end of the potato. The eyes here are weak and two or more should be included on the seed piece. The eyes in the middle of the potato are strong and vigorous and one is suffi-

cient. At the seed end the potato should be so cut that the numerous eyes may be distributed over two or three seed pieces. We aim to have a good sized seed piece with enough substance to nourish the young sprouts and to have a good strong vigorous eye to each piece.

We plant with a machine of the type which allows for a man to ride on the machine and correct it in case it fails to drop a seed piece or drops too many. With this planter and with seed carefully cut as I have indicated it is not hard to secure practically a perfect stand.

The spacing of the seed pieces should be determined by the fertility of the soil, moisture conditions, the care which is expected to be given the crop, and the demands of the market. The seed grower will find his market inclining to a rather small potato. The grower of table stock will find his market requiring a larger potato, but coarse over-grown tubers are not popular in any market I have seen. Under our conditions with a good strong soil, fairly retentive of moisture, with a usually abundant rainfall and with good care we are able to grow the small to medium sized tubers demanded by our seed market by planting the seed ten inches apart in the row and spacing the rows thirty-three inches apart. In northern Maine, where climatic conditions are most favorable for the potato, I would plant the seed pieces closer together in the row. On poor soil or on land likely to suffer from drought I would give them more room. A grower who will give this matter a little thought can after a few years' experience hit upon the spacing which is best for him and his market, under average conditions.

The best time for planting is a problem which each grower will have to solve for his own conditions. In growing early potatoes for seed we have found it best one year with another to plant after June first. We have found that early varieties planted much before this time will bloom and set tubers in early July when we may expect dry, hot weather. A protracted spell of such weather will cut short the crop by inducing early ripening when later plantings which are not at such a critical stage at this time will remain vigorous and will make good crops if rains come in August or early September. With such a variety as Irish Cobbler, under our conditions I believe that late planting will make a difference of several bushels per acre in the average field through a period of ten years. If I were planting late va-

ieties or planting early varieties for the early market, I would plant by May 15th.

*Fertilization.*—I have considerable hesitancy in discussing the fertilizer problem, as we have it in New England, with an audience of Wisconsin farmers, especially in view of the fact that I find according to the last census that the little state of Vermont spends annually for commercial fertilizer more than four times the amount spent by the great state of Wisconsin. In the East, however, we have come to the conclusion that it does not pay to plant potatoes without the application of commercial fertilizers. The amount applied varies all the way from a few hundred pounds to over one ton per acre. An application of one-half ton per acre is considered a fair application.

Experiments conducted in Vermont by the German Kali Works on sandy loam soil of poor fertility show that in 1913 an application of 1000 pounds of commercial fertilizer analyzing three per cent nitrogen, eight per cent phosphoric acid and ten per cent potash, increased the yield eighty-four bushels per acre. The cost of this fertilizer was about \$17.00. The increased value of the crop was \$50, leaving a net profit of \$33.40.

This same year a similar experiment on my own farm, on rich soil, showed an increase of 57.6 bushels per acre from an application of 1,500 pounds of fertilizer costing \$22.50, leaving a profit of \$12.06 above the cost of application, besides a residual supply of plant food left for the succeeding crop.

This past season the results of experiments on very fertile soil show that an application of 1,050 pounds of commercial fertilizer, costing about \$16.00, increase the crop forty-nine bushels per acre, leaving a net profit of \$13.40 above cost of application, besides the residual supply of plant food.

In the face of these facts we would be unwise not to use commercial fertilizers. Whether or not it will be for your conditions is a question which I am unable to answer.

*Cultivation.*—Cultivation of the potato crop is for the two-fold purpose of conserving soil moisture and killing weeds and the one is as important as the other. The careful potato grower must ever be on the alert to conserve soil moisture because during almost every season there is some period when the crop must depend upon the reserve supply in the soil. If plowing is done in the spring, it should be done early before the land is dried out. Following every rain the land should be harrowed to main-

tain a blanket of loose soil on the surface and check the evaporation of soil moisture. We have found it profitable to maintain this mulch with harrows and cultivators from early spring until the potato tops cover the ground.

The farmer who pays close attention to the conservation of soil moisture will have little trouble with weeds. Indeed, I know of no other farm crop in which weeds may be so easily managed, because the potato plant will allow of rougher treatment than almost any other. The harrowing necessary to fit the land will have killed any weeds which may have germinated before planting. If the seed is planted to a depth of three or four inches, the field may be harrowed with a light harrow two or three times before the little potato plants appear above ground, thereby killing the little weeds as fast as they germinate. When the plants do appear a deep working with a good riding cultivator will kill weeds between the rows and will smother those in the row by burying them. We have no fear of burying the young potato plants because they will soon grow through the covering, strong and vigorous enough to keep ahead of any weeds which may germinate around them later. Weeds in the row may be kept down by later cultivations. Care should be exercised not to work the soil too deeply after the roots have grown out into the row because injury will be done by root pruning. Frequent cultivations done just at the right time will enable the grower to conserve soil moisture and keep down weeds at a minimum cost.

*Diseases and Insect Enemies.*—I am aware that the subject of potato diseases is to be discussed by Mr. Vaughan and by Mr. Jones, whose work on potato diseases at the Vermont Station was so valuable to potato growers. I wish to say a few words, however, about this subject because of its great importance in the management of the potato crop in our climate.

The diseases of the potato seem to be almost legion. Eternal vigilance on the part of the grower is the price of freedom from them.

We have had our troubles with common scab and have been able to reduce the damage caused by it by disinfecting the seed, by the use of sulfate of ammonia in the fertilizer and by plowing under clover sod, rye, or some other cover crop.

We have practically eliminated black leg by disinfection as for scab, by discarding when cutting all tubers showing discol-

ored flesh and by removing from the fields all hills infested with this disease.

We have reduced the percentage of curly dwarf by seed selection and hope to overcome it entirely.

Streak, leaf roll, mosaic, fusarium wilt have been occasional visitors but never serious.

Rhizoctonia appeared this year to an extent which was somewhat alarming but we hope to be able to overcome it.

Thorough spraying with Bordeaux mixture for late blight has been a custom with us for many years. Experiments begun by Dr. Jones at our Experiment Station and carried on now for twenty years have shown an average increase of 105 bushels per year on sprayed plots over unsprayed plots. In the face of this record we would be unwise not to spray.

Our equipment for spraying consists of a sprayer and a mixing outfit. The sprayer is built so that the turning of the wheels furnishes power for running a pump powerful enough to carry from 100 to 150 lbs. pressure and spray six rows at a time. The mixing outfit consists of an old wagon on the bed of which is built a skeleton platform. On this platform is placed a small gasoline engine and a rotary force pump. Another platform is erected above this for the mixing barrels, high enough so that the mixture will run into the sprayer tank. With this outfit water may be pumped from any well or stream. Two men and a team can spray twenty acres in a day with this equipment if the water supply is handy, at a cost of \$1.30 per acre for labor and material at present prices. Five sprayings have been sufficient during this year when blight has been very prevalent to thoroughly protect the plants. This makes a total cost of \$6.50 per acre for thorough spraying with Bordeaux mixture. This mixture also checks the ravages of the flea beetle and arsenate of lead or paris green may be added to it to kill the Colorado beetles. I have visited many potato fields in my state this fall and did not see a single case of blight where spraying was thoroughly done with Bordeaux, while I saw hundreds of fields badly infested which were not sprayed or were sprayed with some commercial preparation. Under no consideration would I omit thorough spraying from the list of necessary operations in potato growing.

*Storage.*—A frost proof potato storage is almost necessary for the northern farmer because it is seldom that the crop may be

moved to advantage directly from the field. Such a storage should be convenient for unloading with the least possible labor, should have a concrete floor so that the potatoes may be shoveled and should be so arranged that the potatoes may be loaded conveniently. Maine farmers construct such a storage by digging into a bank so that three sides of the storehouse are protected from freezing. The teams drive into the top of the house, so that the potatoes are emptied into the bins from above. When the potatoes are sold they are handled on a floor on a level with the bin floors and they are taken out through a door on the unprotected side of the house. A space is usually left at this end in which the men work while sorting. In such a storehouse potatoes may be handled with a minimum of labor.

Our storehouse was constructed not unlike a basement stable by raising an old barn and building a basement of masonry. A driveway in the center and two wide doors at either end allow teams to drive through and unload from the wagon into bins on either side. When these bins are full the driveway is filled from above. The walls are banked with earth so that a small stove will keep this cellar warm in cold weather.

*Marketing.*—The commercial potato grower must market his crop to advantage, else his operations will not be profitable. The northern grower now has two avenues open to him: the seed market and the market for table stock.

I have referred to the fact that cheap transportation has made it possible to ship potatoes long distances to more favorable markets. This has brought about a kind of reciprocity between different sections of the country. The potato plant attains its greatest perfection when grown in the cool climate of the north. Therefore, southern growers find it to their advantage to purchase seed for their annual plantings in the north. The requirements of this market are that the seed be free from mixtures of other varieties, that it be of small to medium size, and free from those diseases which carry over on or in the seed. The northern grower may sell first class certified seed in the fall or winter at an advance above the common market price or he may contract in the spring for the next season's crop at a price which will average to yield him a very good profit. Personally I incline toward the latter method.

The great bulk of the potatoes grown must however, be marketed as table stock. Concentration of people in large cities

has brought about changed methods of distributing food products, with which methods the American farmer has not kept pace. There is too much of a tendency on the farmers' part to produce simply for the local dealer without regard to how the product is handled by the different men who transport it and distribute it to the consumer. No man can be more interested in having the consumer receive a product in first class condition and at a reasonable price than the producer, because thereupon hinges the demand which will take care of the great volume of that product which exists in the country. When viewed from this standpoint, how is our potato crop handled? The majority of people who live in large cities have no storage facilities and must buy their supplies from day to day. I have seen potatoes exposed to the light on stands and in retail stores in our large cities until they were turned green and almost unfit for human consumption. When potatoes were so low in the country that the producer was receiving thirty cents per bushel for them the consumer in the city who must buy in small quantities was paying four cents per pound or \$2.40 per bushel for potatoes which only a taste inherited from some potato eating ancestor would prompt him to eat.

The potato grower has a product which is used every day by almost every American family. It is a nutritious, healthful food when properly handled and cooked. Middlemen are necessary in handling this product and they should be well paid for their services, but they should be made the servant of the producer and not his master. The accomplishment of this, like the solution of most agricultural problems is beyond the power of the individual. It is, however, possible for a group of individuals working through an association like this. I believe the potato-growing industry of Wisconsin may be revolutionized by this association if its members will subscribe money enough so that a thorough study may be made of marketing conditions, so that experiments may be conducted in grading your stock, in putting it up in attractive cartons, and by seeing that dealers are educated to handle your crop properly and made to sell it at a reasonable price. This is the day of the standard package, the standardized product and the brand which stands for quality. Prosperity will wait upon your industry if you take the lead in doing for the potato what has been done successfully for so many products.

## The History and Development of the Potato Industry in Waupaca County

By HON. E. E. BROWNE

Congressman from Wisconsin.

The poet Emerson has said, "The first farmer was the first man, and all historic fable rests on possession and use of land."

Daniel Webster said, "When tillage begins other arts follow."

The farmers are therefore the founders of human civilization. Even old China recognizes the importance of agriculture when the emperor plowed a furrow of ground every year. Adam, the



HON. E. E. BROWNE  
Congressman from Wisconsin.

first agriculturist, was given an unlimited domain. He had no taxes to pay, yet he made a dismal failure of farming. But Adam made a failure of life all along the line. After Adam came the days of the Patriarchs, and the history of the world gives us no picture more stately and grand than those of these nomadic chiefs whose wealth was in flocks and herds and whose title to power were their only kingly attributes; nor has language ever told a sweeter story than that of royal born Rebecca filling her pitcher at the well and hastening with gracious hospitality to refresh the stranger at her door.

There is no more important person, measured in influence upon the life of the nation, than the farmer and the farmers' wives; no more important home than the country home, and it is of national importance to do the best we can for both. The farmers have hitherto had less than their full share of public attention along the line of business and social life. The United



States in the past has been expending over sixty per cent of its income for its army and navy and its rivers and harbors, and only three per cent for agriculture; and yet, it is claimed on all sides, and probably justly, that we are unprepared in case of war. The United States by experimental work hopes ultimately to double the average yield of wheat, corn, potatoes and other products. This will be a great achievement, but it is equally as important in my mind to improve conditions so that we can double the desirability, comfort, and standing of rural life. Whatever will brighten home life in the country or city and make it richer and more attractive for mothers, wives, daughters and sons should be done promptly, thoroughly and gladly. Organizations such as the Potato Growers' Association and others of its kind which have been rapidly increasing in Wisconsin are accomplishing this long and much desired result.

I have resided in Waupaca County for forty-seven years and can remember very distinctly when there was no market whatever for potatoes, except the local market, and that potatoes were a drug on the market and the surplus was used mostly to feed stock. The first potatoes that were favored by Waupaca growers were the "Peach Blow" and "Early Rose." Then followed the "Beauty of Hebron" and "Peerless." These were the main varieties up to 1882. About 1876 or 1877 a number of people began to think of buying potatoes and shipping them to the cities in carload lots. The late Ed. Bailey and Peter Nordeen shipped five or six carloads in 1876 and twenty-five or thirty carloads the next year, from the city of Waupaca. I think these were the first carload lots shipped out of the state of Wisconsin. The soil of Waupaca County was adapted to the growing of a fine quality of potatoes, and Waupaca, Waushara and Portage counties, where the conditions are much the same, have produced potatoes in considerable quantities from 1850 to the present time. In 1879 and 1880 A. M. Penney of Waupaca, then of the town of Farmington, shipped some sixty-six carloads of potatoes from the station of Waupaca, and from that time until the present Waupaca County and vicinity has been the center of the potato industry in Wisconsin and the city of Waupaca the greatest potato shipping station in the *world*. The city of Waupaca alone has shipped as high as 2,200 carloads of potatoes in a single season, and from which the producers received between \$800,000 and \$1,000,000. Potatoes in 1892 were

sold from 50 cents per bushel up to \$1.10. Commercially speaking the potato industry in Wisconsin only dates back about thirty-five years. One of the greatest yields in Wisconsin was in 1914 when the state produced approximately 36,000,000 bushels. One-fourth of this amount or 9,000,000 bushels, came from Waupaca, Waushara and Portage counties. For many years Waupaca County potatoes were regarded as the highest quality of potatoes that came into the great city markets, and potatoes raised in Waupaca brought from five to ten cents per bushel more than potatoes grown elsewhere. This reputation for a high quality potato was made on the variety known as the "Burbank Potato," a potato adapted to the sandy loam of Waupaca County and vicinity, and as good an all-round potato as was ever grown, both as to quality and as a large yielder. Whether the Burbank potato will be able to come back and hold the position with its competitors is a question, and the trial is worthy of a tremendous effort.

The Rural New Yorker has now been quite generally united upon and standardized by our growers and as high a grade of Rurals is being produced in Waupaca County as any place in the world. At an early date the potato farmer in Waupaca County learned that it would be necessary to rotate his crops and that it was not advisable to have one crop of potatoes follow another, so the general practice has been to follow a potato crop with grain and seeding to clover, and then leave the ground seeded for two years, then turning the sod under for another crop of potatoes. This rotation of crops and the raising of clover has brought in the cow and the dairy, so that Waupaca County holds the place not only of the first potato, but also one of the first dairy counties in the state, and last year produced over \$2,000,000 worth of dairy products.

The potato raisers in Waupaca County are raising more potatoes per acre each year owing to the fact that they are keeping more stock than they used to and are raising more clover and their land is consequently in better condition. Some farmers are raising more potatoes than they used to with only one-half the acreage. There is also a great difference that can be seen in the yield and quality of potatoes raised in the same localities, and under the same conditions. Good seed, and planting the right time, are usually responsible for the heavier yield. The

use of good seed, carefully selected and cared for, I believe is the best investment that can be made.

I believe that many potato raisers are making the mistake of planting too late. This of course saves some work in keeping off the potato bugs, but many times the potatoes do not get ripe at digging time and are dug while they are green. In the handling and shipping they peel, which of course hurts their looks and keeping qualities and injures their selling value very materially. The cost per bushel for raising potatoes in Waupaca County has increased some in the last ten and twenty years. From a careful computation by twenty large potato producers in different localities, representative farmers, figuring independently of each other, the rent of the land, the cost of labor, in preparing the land and care and cultivation, the cost of marketing the potatoes, the average is 20 cents in 1894; 25 cents per bushel in 1904, and 30 cents in 1914.

Our potato industry is but in its infancy compared with Europe. This country raises but four bushels per capita of potatoes while European countries raise twelve, fifteen and thirty, and even 250 bushels. These people eat potatoes more freely than we do and cook them in a vastly greater variety of ways. Germany with a territorial area less than the state of Texas, raises two billion bushels or five times as many potatoes as the whole United States. Almost every large farm in Germany has its alcohol distillery under Government supervision and quite a portion of the crop is turned into denatured alcohol which is used instead of gasoline, kerosene, etc., for gas engines and other industrial purposes. There is no odor in alcohol like gasoline, it is not as explosive, and the same bulk will go considerable further than gasoline. A German farmer would think it as strange to buy gasoline for his power engine or automobile as one of our farmers would to buy milk. The *Orange Judd Farmer* says:

"The alcohol, like sugar and starch, comes from the sun and air, instead of from the soil. The mash remaining after these substances are partly extracted, makes a splendid feed for all live stock, especially dairy cows. This is as popular in Germany as is dried beet pulp in our eastern states or wet beet pulp available to western breeders from our beet sugar factories. This potato mash contains all the nitrogen and mineral matter, which are returned to the soil in the manure. The re-

sult is that such extensive potato culture produces two or four times as many bushels of potatoes per acre as the average in America, with less tax upon the soil's fertility. All the loss from probable rot is avoided by promptly using the threatened tubers for alcohol manufacture. Think what this would have saved individual farmers in our whole country this year, a total of many millions of dollars."

I believe that manufacturing alcohol from potatoes in this country is perfectly feasible, and if the Standard Oil Company and its lobbies are not strong enough to prevent it, the Congress can pass a law that will make it possible for every farmer who raises a large number of potatoes to manufacture denatured alcohol under government supervision upon his own farm, so that he will be able to supply himself with power for his gasoline engines and have alcohol to sell, and do this from potatoes that are not marketable or in years when potatoes are low. I am now investigating the subject and intend to see if some national legislation cannot be worked out along this line. At present all flour from grain made in Germany contains a large mixture of potato flour. This is another and valuable way of utilizing the potato.

The following are some figures showing the number of acres, the average yield per acre, the total crop, the population of the country, and the number of potatoes per capita produced by other countries. A comparison of the potato crop and population will show at a glance that the potato industry in the United States is only in its infancy compared with Europe, and also the great possibilities of the potato.

	Total acres	Av. yield per acre	Total crop
Germany .....	9,000,000	250	2,000,000,000
France .....	4,000,000	150	600,000,000
Austria-Hungary .....	5,000,000	125	600,000,000
Netherlands .....	4,000,000	400	1,600,000,000
United States.....	4,000,000	100	400,000,000

	Population	Bus. per capita
Germany .....	70,000,000	30
France .....	40,000,000	15
Austria-Hungary .....	50,000,000	12
Netherlands .....	6,000,000	250
United States.....	100,000,000	4

## Potatoes As Food

By MRS. NELLIE KEDZIE JONES  
Auburndale, Wisconsin.

The history of the introduction of the Irish Potato into Europe and subsequently into America is involved in many traditions and stories more or less conflicting. Sir John Hawkins,



MRS. NELLIE KEDZIE JONES  
Auburndale, Wis.

it is recorded, found the Indians in Mexico and Central America roasting a certain tuber in the ashes and eating it. More as a curiosity than anything else he took some of the tubers to England whence they were carried to Holland and a gardener raised them for their blossoms. The gardener's son in burning up some of the dry potato tops accidentally observed that the roasted tubers when stepped upon were white and mealy on the inside. To make a long story short, he recalled that he had heard that they were eaten in some countries and so he and his mother tried some with salt and a little cream. They got a glad

surprise indeed. Soon their use as food became general in Holland and when Ireland was suffering from a dreadful famine a member of the British parliament, remembering to have heard of the wonderful amount of food that could be grown in an amazing short time from potatoes, had them introduced into Ireland. Our ancestors coming to settle in the new land, afterward called "New England" brought with them, what they called "Irish potatoes," little dreaming that really they were but returning to its native land, the greatest of all food plants, save wheat alone.

Some things we appreciate only after we have lost them. Men who had to live without potatoes, the old time sailor, the miner, the soldier, suffered terribly from scurvy. Many an army has been whipped not by the enemy but by the lack of potatoes. Being acid they are good anti-scorbutics. Aside from their actual nutritive value they help balance a heavy meat diet, regulating and conditioning the system. One of my friends, then dietitian for some of the public institutions in the state of New York, in a year when potatoes were very scarce and high priced tried to feed the patients on substitute food but found at once it was very hard indeed to keep them up to the usual standard of health. In the language of the man in the street, "Potatoes are healthy." You Wisconsin potato growers, may never have thought of it but you are putting on the market a "health food."

Potatoes furnish food for our families. Potatoes furnish food for our stock. Potatoes could as well as not furnish fuel for our gas engines. With hampering legislation removed, and potato alcohol or "Spiritus" as cheap as it now is in Germany we can use one potato to cook another. Why should the Wisconsin farmer ever have to buy gasoline? But I am talking on the potato as food.

Potatoes vary but they contain from seventy-one to eighty per cent of water and from fifteen to twenty per cent of starch. You know that starch in the process of digestion is converted into one of the sugars so you can see what good food potatoes are. Then too potatoes contain several salts which are most necessary for health and growth, for example, potash, soda and lime. These salts are deposited near the outside rather than the center of the tuber so it is good practice to cook your potatoes with their jackets on if you want to get the full value of your potato. If you do not want to cook them that way be sure to pare them thin and so save not only potatoes, but the best part of the potatoes.

In Wisconsin we eat more potatoes on the average than they do in some of the other states where their potatoes are not as good as ours nor nearly so sure a crop. Some of our families eat potatoes three times a day. Potatoes are indeed good food, but moderation is good in all things and it is possible for sedentary people to eat too many potatoes. We must feed our families as we do our stock, a balanced ration. Some times the Irishman at hard labor will eat as high as fifteen pounds of pota-

atoes a day and then not be very well nourished for he does not get enough meat, with its proteid, to balance the starch in his potatoes.

Would you give the baby potatoes? No I would most assuredly not give the baby potatoes. Why? For the simple reason that the glands secreting the juice necessary for the digestion of the starch in potatoes have not yet developed in the very young child, so potatoes do not help but may hinder most seriously. After baby has a mouth full of teeth the glands will have been developed. Then they are good food for a child.

We eat our potatoes with meat, or with fat. A baked potato with butter or cream, or any kind of potatoes with meat gravy is most excellent. And what men the potato eaters are! The Irishman and the German—how they can fight! When they meet in the death zone between the trenches, let demons tremble.

The potato! Providence bestowed it upon Wisconsin. Our central and northern Wisconsin could scarcely have been developed without the potato. The settler in our cut over regions drags in on a hand sled a couple of sacks of seed potatoes. He and his wife scratch around among the stumps, get a little of our virgin soil over the seed and Lo, a miracle! In a few weeks' time food for man and wife for a year has been produced. It is all very wonderful. The miracle of multiplying the loaves and the fishes seems natural after the magic of Wisconsin soil and climate fructifies the all-nourishing potato.

## Women's Work at the State Potato Show

### A New Departure

EDITOR'S NOTE.—(We are indebted to one of the women who attended the potato cooking demonstration for a write-up of the work. Cooking Demonstrations introduced for the first time, were one of the most successful features of the Convention.)

The last and best potato show was held at Marinette in November with the women formally having a hand for the first time. Mrs. Nellie Kedzie Jones, ably assisted by Miss Dalziel and her home economics pupils of Stephenson Training School, gave four potato cooking demonstrations during the convention. Twenty-five ways of cooking the indispensable tuber were listed on a blackboard. Forenoon and afternoon for two days the work went on with increasing interest. Two hours to a session with Mrs. Jones to lecture and Miss Dalziel assisted by five or six of her young women to cook the various potato dishes saw far more work accomplished than is usual in public demonstrations, where there is less help and that less efficient.



MISS DALZIEL  
Marinette County School of Agriculture and Domestic Science

The Woman's club of Marinette promised the management to co-operate and right well they did. The gallery of the armory was set apart for the demonstrations and fifty women were expected to be in attendance but the first session was one hundred and fifteen women there and each session saw an increase till at the fourth demonstration two hundred and twenty-seven women crowded into the gallery or stood on the stairs while many were turned away. Nor were those present only city women. Good work had been done in the country so that many women



were there from the surrounding farms. It was gratifying to see after the first session how early the women came and how promptly the front seats were pre-empted. The women had the gallery and the men the floor but it was noticeable that big groups of men gathered on the floor to overhear what the women had to say, proving conclusively that potato growing and potato cooking go hand in hand. It has been decided that hereafter the women's work will be a permanent feature of the annual potato show.

The equipment for the demonstrations was the best consisting of an abundance of the latest utensils brought over from the training school. The work was written up on a blackboard where all in the gallery could see. The cooking was done back of the speakers' stand, while in front but to one side was a properly arranged and decorated dining table and on the other side a sideboard. The flowers were red and white carnations. When cooked the various potato dishes were displayed on the table. Samples were distributed by the young women among the audience. Questions were always in order and came thick and fast—not the amateurish kind—but questions from real housewives who knew enough about the subject to ask the kind of question that hit the nail on the head. Numerous exhibitors were most generous in offering the women potatoes out of their exhibits for the demonstrations. It was highly gratifying to see the cordial way the men expressed their approval and interest in the women's part of the program.

Some of the most attractive dishes were left on display on the sideboard. Before and after each demonstration there were groups of women around the side-board and the blackboard, comparing notes, discussing the various kinds of potatoes, and the best ways to cook them. This is most significant, showing that the State Potato Growers' Association no longer serves only the commercial grower but that it this year served the homes of the state and will do so regularly hereafter.

## The Value of School Contest Work to School and Community

By MISS ELLEN McDONALD.  
County Superintendent for Oconto County.

**EDITOR'S NOTE.**—The State Association feels fortunate in securing the services of Miss McDonald, due to the fact that she has been exceptionally successful in conducting school contest work with corn and potatoes in connection with her duties as County Superintendent for Oconto County. An inspection of the work in operation in Oconto County as demonstrated at the County fair and other special exhibits showed that the work in progress was most successful.

For those who wish to bring the home and school together, keep the big boy in school and help him to take an interest in the farm no subject offers the field for work that agriculture does. Not book work but the kind that Dicken's immortal Squeers should have meant when he said, "When a boy knows a thing he goes and does it."



MISS ELLEN McDONALD  
Oconto

We found corn the first interest that touched the farm. Circulars 8 and 18 of the Wisconsin College of Agriculture deal with the selection, curing and testing of seed corn. Teachers studied the circular and studied corn; pupils brought ten ears of corn to school; then teachers and pupils learned to judge the corn. The first year of the county corn contest, although about 250 boys and girls entered, the samples shown were so poorly selected, that the exhibit could

not be called attractive. But by the second year, they knew about uniformity of ears, rows and kernels, how the tip should be filled, what was true to type, and so on. This time the judges

could not so easily select the winners. The third year the corn exhibit attracted wide interest because all exhibits were so well selected.

#### GROWING CONTESTS.

Interest in farming is also furthered by "growing" contests, corn, alfalfa, sugar beets, seed peas and home gardens. There are 605 boys in the corn contest, about 180 in the alfalfa, and many making home gardens. About \$250 is offered by County Fair for premiums including seven scholarships to the Boy's Course of One Week at the State Agriculture school.

Last year in addition to those winning scholarships, several boys paid their own way. It was a happy party of boys, that in charge of one of the men teachers of the county, spent the week at the state capitol. They joined the Corn Grower's Association and came home to spread the gospel of "pure bred corn" throughout the county.

We have seen how practical work in the course of study enriches the work and fits the school to the community. There are also other fields in which the school may enter. Industrial education in some form is accepted as a matter of course for city schools, but there are phases of it which may be fitted to the country school.

We have widened the field and now have alfalfa, barley, oats, and potato contests.

#### THE PLAN FOLLOWED.

The plan followed is the same for all. Where at first but few pupils would enter, now we cannot furnish enough seed. Fathers are anxious that every child enter the contest. One father proudly told how his four boys succeeded in raising ten bushels of pedigreed barley from their small samples, and that he had paid them a dollar a bushel for seed.

This year 273 pupils entered the corn contest.

Thirty-four pupils entered the acre contest.

About 94 pupils entered the alfalfa contest.

About 132 pupils entered the barley contest.

About 89 pupils entered the oat contest.

However the potato contest was the big thing this year. The County Board of Supervisors gave \$200 for seed and necessary expenses. About 204 boys entered. They were given one-fourth bushel each, and many report twenty bushels of seed for next

year. More than 140 exhibited at the county fairs, and they have been earnestly studying the potato bulletins this fall. As to results, parents are interested and help in many ways.

The various contests afford other opportunities for social gatherings, and at least one parents' meeting is given in connection with each of the fourteen sectional meetings. We have lunch at our meetings generally served by the ladies of the district. They stay to teachers' meetings, and we feel it strengthens the bond between us.

#### WORK OF TEACHERS.

These things are all done by teachers with but little professional training but a great deal of professional spirit. We have had for three years a six weeks' summer school and about eighty-five per cent of our teachers attend. They take such subjects as writing, agriculture, current events, sewing, or manual training, as well as academic work. We try to plan these courses so that they shall go out to their schools in the fall filled with enthusiasm for the opportunity offered in the little brick school, and with a keener appreciation of what life in a country community may mean.



**Potato Cooking Demonstration**

## The Correlation of Agricultural Work in Wisconsin

By C. P. NORGORD

Wisconsin Commissioner of Agriculture.

ADDRESS DELIVERED AT MARINETTE CONVENTION.

The Wisconsin State Fair has a mission—the Wisconsin County Fairs have a mission. This mission is to teach by presenting ideals of farm animals, farm crops, domestic products, art, ma-

chinery and all lines of work which touch the agricultural life of the state. Its main mission is an educational mission and fairs are established and supported for this purpose, mainly. Since, however, we can not draw people in large numbers without other attractions, fairs must of necessity be entertainers. As a lecturer may drive home a lesson with an appropriate story, illustration or joke, so a fair may attract and hold the attention of the largest number of people by presenting its educational ideals in connection with and supported by, good entertainment. It is therefore proper and to the interest of our fairs that the



C. P. NORGORD  
Wisconsin Commissioner of Agriculture

best class of entertainment be provided. The fair today for the boy and girl is a golden day long to be remembered. On the morning of that bright September day the farmer lad and lassie arise with alacrity long before the peep of day. The cows are

milked, the horses fed, cleaned and harnessed, the breakfast dishes washed with a vim, and they are off for the fair, with stirring anticipation.

The experiences met by the lad and lassie form a day surpassed by no other day in the life of the man or woman brought up on the farm. The crowds of people, neighbors and friends from all parts of the state meeting in joyful dinner parties, the beautiful horses and cattle parading the grounds and lined up in the barns, the sights of pumpkins, corn, potatoes and grains of choicest type, the music of the merry-go-rounds, brass bands, the shouts of hucksters, the excitement of the race, form indelible memories, the choicest pictures of country life.

At no other place can the perfect type of animal and farm product be so firmly implanted in the minds of so large a number of people as at the fair. The ideals formed at one fair are coined into practical results and presented at the next. Thus, are ideals taught, formed and put into practice by the fair. The fair is a constructive, educational puller or the opposite in proportion as the ideals presented are right or wrong. It is therefore of the most vital importance that the ideals placed in the premium list and selected by the judges be the right ideals. Where shall the right ideals be secured? Does not the state spend its money and employ practical and scientific men to study each line of agricultural endeavor in order that the best ideals may be discovered and set forth? It does. And therefore, these ideals put forth by the educators and experimentalists along agricultural lines should be made the ideal of the fair premium list and the fair judge.

It is the purpose of the officials of the state fair and county fairs alike to build their premium list on these ideals and to select judges who will pick out the proper type corresponding to these ideals. To do this there must be hearty and perfect co-operation between the state fair and the county fairs, the college of agriculture, and all other agricultural institutions in the state. It is our purpose to strive to bring this about. The premium list of the state fair will therefore be modified in such a way that the corn and farm grain schedule will be such a schedule as will correspond with the ideals of the Department of Agronomy, the experiment associations, and best farmers in the state; that the premium list shall have potatoes, vegetables and fruit such as is advocated by the Wisconsin Potato Growers' As-

sociation, the State Horticultural Society, and the best horticulturists of the state.

On page 37 is given a copy of the schedule such as will be used in the premium list of the State Fair the coming year.

It is the hope of the officials of the state fair that we may have at the state fair the coming year a display of potatoes that will compare favorably with the display shown at the annual meeting of the Wisconsin Potato Growers' Association. The potatoes presented at the fair under these schedules will be grouped in a separate place or building. There will also be an opportunity for exhibits from general exhibitors not members of these associations, but these association exhibits will in a way represent the professional class in the state.

In past years there have been excellent exhibits of potatoes and of other farm products in connection with the county exhibits.

It is the purpose to standardize potatoes and grains in these exhibits and to have them judged by men, specialists, who will judge these lines in the general exhibit so that all products at the fair may be judged by specialists who know the facts that should be put forth and who are able to judge each line correctly. The superintendent of the county exhibits will then take these scores presented by these judges of special lines, combine them, and thus arrive at the best county exhibits from the combined scores obtained from various special lines.

The officials of the state fair appreciate the great work of the Potato Growers' Association and are desirous of recognizing it and they especially invite the thorough co-operation of each member of the association in bringing to the state fair this coming year the finest display of potatoes ever shown there. The same co-operation is desired by the officials of the county fairs throughout the state. Thus by realizing the great and important mission to our fairs by finding and adhering to the highest and best ideals, by the co-operation of the state and county fair officials with specialists along each line of agricultural endeavor and with the best farmers of the state, we are sure that the fairs will accomplish their high mission and they, together with the best and practical farmers, the experiment station, the college of agriculture, in co-operation with all agricultural agencies of the state may be able to make progress in improving the agricultural situation throughout the state.

PREMIUM LIST ON POTATOES 1916 WISCONSIN STATE FAIR

(One peck each variety)

	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
Rural New Yorker..	\$10.00	\$7.00	\$5.00	\$4.00	\$3.00	\$2.00	\$2.00	\$1.00	\$1.00
Green Mountain ....	10.00	6.00	4.00	3.00	2.00	1.00	1.00		
Burbank .....	7.00	4.00	3.00	2.00	1.00				
Early Ohio .....	7.00	4.00	3.00	2.00	1.00				
Early Rose .....	7.00	4.00	3.00	2.00	1.00				
Triumph .....	7.00	4.00	3.00	2.00	1.00				
Irish Cobbler .....	7.00	4.00	3.00	2.00	1.00				
Any other recognized standard variety of merit .....	7.00	4.00	3.00	2.00	1.00				

Attractive silk ribbons will be awarded on all classes.



**Winning School Contest Exhibit**

Potato growing contests will be a feature of field work in several counties in 1916. The association has voted to give especial attention to this work.



## Standardizing Wisconsin Fair Premium Lists

By ARTHUR TAYLOR

Secretary Oneida County Fair Association.

(EDITOR'S NOTE.—Attention is called to an important action taken by the State Convention to result in a state wide movement to standardize Wisconsin Fair Premium Lists. The Executive Committee of the State Association was directed to confer with Commissioner C. P. Norgord relative to these plans. The reader should refer carefully to the statement of Commissioner Norgord here published after reading Mr. Taylor's address.)

I suppose that the "Standardizing of Wisconsin Fair Premium Lists" was assigned me for the reason that I have had some experience as Secretary of our County Fair and am supposed to



ARTHUR TAYLOR  
Rhinelander  
Secretary, Oneida County Fair

know something of what would be the best standard to set for County Fair purposes. I think that a set standard could not be established for the reason that the soil and climate from southern to northern Wisconsin varies materially. At the State Fair this fall two meetings were held, by the persons having charge of the county exhibits, for the purpose of making recommendations along certain lines, to bring the matter of county competition into more clearly defined lines. As the present convention considers nothing but potatoes, I will try to give some of the ideas presented at the two meetings mentioned.

In Oneida County at the present time the bulk of the potatoes grown for shipment does not exceed eight or ten varieties, and on this particular point was the ground for the recommendation made at the meetings mentioned for presentation to the State

Fair Board, which, if adopted, will call for a complete revision of the State Fair Premium Book, especially for that portion relating to the Grains, Grasses and Potatoes. In the county exhibits, some counties had only seven or eight varieties of potatoes, while other counties had from thirty-five to forty varieties. The award to counties being based on points and the number of varieties exhibited being entitled to a certain number of points, an exhibitor with a large number of varieties might secure first place over a high quality exhibit of fewer varieties. It, therefore, was decided to ask the State Fair Board to limit the number of varieties that each county could compete in to five. Not that each county was compelled to exhibit the same varieties, for some counties can produce certain kinds of potatoes better than other counties.

Now this leads to the Standardization of Premium Lists, and how near can we come to it.

In preparing this paper I had twenty-five premium lists from as many different counties and found a striking contrast in what was considered due the potato by the officials of the various agricultural societies. Some considered that a prize of seventy-five cents for first was enough to start the farmer to potato raising and in the bulk of the lists at hand, \$2 appeared to be about the average, but in one county I find that they offer as high as \$15 for a bushel of standard potatoes produced from certified seed, and accompanied by a certificate stating that they had been inspected during growth. Not satisfied with that, they made second prize \$10, third prize \$7.50, fourth \$5 and fifth \$2.50, and in two years have placed that county in a very good position as a potato grower.

Now, my opinion is that the Wisconsin State Fair Premium List should be thoroughly revised and made a standard for the various County Fairs to follow, not closely, for, as I before intimated, soil and climate would cause some material change. However, Agricultural Societies could use the revised State Fair Premium List as a basis upon which to prepare their premium list and as a goodly number of the counties in the state have agricultural representatives to call upon for assistance, the various premium lists could be much more in accord than at the present time. I do not think that the amount of the premium offered for various exhibits should be the only incentive for the farmer to strive for; there should be the spirit to grow the best,

not for the prize offered, but the feeling of pride that possession of first premium gives in having done something well. But we must admit that the amount of premium offered has a great influence on the results at any County Fair in the state.

In stock raising you see the big money is usually offered on the registered animal of the several kinds, while the grade gets but casual attention. Then why should this example not be followed in the growing and exhibiting of the well bred in the potato, grain and grass families?

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**Five of Wisconsin's County Agricultural Agents Who Are Working on Potato Improvement**



**R. KOLB**  
Taylor Co.



**A. H. COLE**  
Lincoln Co.



**G. R. INGALLS**  
Eau Claire Co.



**OSCAR GUNDERSON**  
Vilas Co.



**GRIFFITH RICHARDS**  
Price Co.

Wisconsin now has fifteen men in the field. They are F. Swoboda, Langlade County; R. L. Cuff, Barron County; Oscar Gunderson, Vilas County; W. D. Juday, Oneida County; A. H. Cole, Lincoln County; R. Kolb, Taylor County; Griffith Richards, Price County; J. Klinka, Polk County; C. B. Post, Ashland County; C. T. West, Sawyer County; J. Humphrey, Marathon County; J. M. Coyner, Portage County; Leslie Oldham, Walworth County; J. Walz, Douglas County; G. R. Ingalls, Eau Claire County.

## Potato Growing With Special Reference to Some Eastern Methods of Procedure

DR. H. J. WHEELER

Formerly Director of the Rhode Island Agricultural Experiment Station.

### INTRODUCTION.

Recently Professor Carver of Harvard University has called attention to the fact that this country leads all others in its crop production per ~~acre~~ <sup>man</sup>. He asserts that the problem for the future



DR. H. J. WHEELER  
Boston

is to increase yields. It is interesting to note that Illinois produces seventy-five bushels of potatoes to the acre; Michigan, ninety-five bushels; New York, ninety-eight bushels; Wisconsin, 100 bushels; Massachusetts, 116 bushels; Vermont, 122 bushels; Rhode Island, 127 bushels; New Hampshire, 128 bushels; and Maine, 206 bushels. In Maine it is estimated that the cost of raising an acre of potatoes is \$75.00, and hence the yield per acre becomes an important item.

According to Austin Jones of Maine, an increase of forty bushels to the acre in that State would render it possible to produce the same number

of bushels as at present with the cultivation of 21,572 acres less than at present. This is equivalent to a reduction in the cost of production of 5.7 cents a bushel. According to his estimate this would add a net income of \$1,617,900 to the potato growers of Maine.

## TILTH OF GREAT IMPORTANCE.

Good tilth is brought about by suitable crop rotation. By such rotation the quantity of vegetable matter in the soil is greatly increased. Few crops are as responsive to such benefit as potatoes and Indian corn.

## CONDITIONS AFFECTING THE DEVELOPMENT OF POTATO SCAB.

According to the latest information, common potato scab and powdery potato scab are affected in the same way by the same conditions. The writer experimented with potato scab for four years in Rhode Island. It was found that wood ashes, carbonate of lime, stable manure or any substance which rendered a very acid soil less acid, neutral or slightly alkaline increased the scab, if the germs of the disease were already present in the soil. On the other hand, scab was less likely to develop in exceedingly acid soils.

It may, nevertheless, be possible if a soil is made excessively alkaline by the use of slaked lime, that the conditions will become unfavorable to scab, temporarily, but this has not been sufficiently demonstrated.

Treating the seed tubers with corrosive sublimate solution or with formalin will lessen the danger of scab unless the soil is very badly contaminated at the outset. In the case of badly contaminated soils the use of acid fertilizers in the drill is recommended. Similar benefit may be secured by rolling the seed tubers in sulphur and scattering more sulphur in the drill. This benefit is due to the oxidation of the sulphur and the formation of sulphuric acid. This treatment is quite expensive, whereas the former may be had without expense other than that entailed in buying the fertilizer. Obviously, if alkaline fertilizers are used for potatoes, the tendency is to increase scab if the disease organisms are present.

Scab is becoming a serious menace in many parts of the country, and hence all seed tubers should be treated with formalin or corrosive sublimate solution before planting. The latter is said to be more effective for the prevention of rhizoctonia, and one can always be sure of the strength of the solution. Sometimes the formalin is poor or it has been adulterated.

In the case of excessively acid soils, light or moderate liming may be necessary in order to insure a satisfactory yield of large tubers, but usually little, if any, should be used. If employed

at all, it should be applied following the removal of the potato crop and seldom or never immediately preceding it.

The writer's own experiments have shown that scab organisms exist in the soil for at least eighteen years, even though no potatoes, beets or other crops known to be subject to scab were grown in the interim. The scab organisms, therefore, live on decaying organic matter. This fact emphasizes the importance of continuous seed treatment especially on new land.

#### SEED SELECTION.

All growers are urged to practice hill selection in the field, and to save seed only from selected hills which contain good tubers. From such seed selected for a period of four years, Mr. E. A. Rogers of Aroostook County, Maine, produced 550 bushels of potatoes to the acre. With rows thirty-two inches apart and hills twelve inches apart in the row, an acre will contain 16,170 hills. If each hill yields four eight-ounce potatoes, there will be 539 bushels to the acre, or less than the yield which Mr. Rogers secured.

The selection of seed from the pile is better than no selection at all. It must not be forgotten, however, that a small potato from a good hill is far better for seed than a larger potato of poor parentage. There is much evidence to show that the best results are secured from four-ounce potatoes cut in two pieces or from whole potatoes weighing at least two ounces, provided they are of good parentage. It should be remembered that increased yields mean a greatly increased demand for plant food. This demand should be met fully in order to insure profitable returns from the crop.

#### THE EFFECT OF MATURITY OF SEED AND ITS NITROGEN CONTENT.

In the south second crop potatoes are considered better for seed than potatoes from the first crop. It has also been found that potatoes which are dug early are better than those which are dug late. Potatoes grown without much potash have been found to be better for seed than those grown with potash. Chemical analysis shows that immature potatoes and those grown without the use of potash are often richer in nitrogen. It appears from experiments made by the writer and Mr. Damon in Rhode Island that there is some advantage from the extra nitrogen in the seed tuber. This is more evident than otherwise if the potatoes are sprouted once or twice before planting.

## BUDDING POTATOES.

Mr. William A. Peckham, Little Compton, R. I., often buds 200 bushels of seed potatoes in a year. They are packed in flats, one potato deep with the seed end up and exposed to the sunlight for from five to six weeks. He reports that the Green Mountain variety gives "only a few buds, sometimes only one, and seldom more than three or four, and those close to the seed end."

The Rose varieties put out strong buds all over the tuber. The Irish Cobbler stands between the other two in this respect.

He insists upon one strong bud on each piece. The pieces are planted by means of a tobacco setter. He claims that by this practice of budding a much larger yield is usually secured and the crop is often ready to harvest ten days earlier.

## CUTTING.

Buds at the seed end of the potatoes are far better than those at the stem end, if the size of the pieces is identical. The size of the piece is important since it contains the reserved food for starting the young plant. Gypsum and sulphur have been recommended as materials in which to roll the seed pieces before planting. The latter, however, should be avoided if the soil is exceedingly acid, for it increases acidity. Ground limestone should not be used because it makes the soil more nearly neutral or alkaline.

## USE OF FERTILIZERS.

Do not allow pieces of seed tubers to come in direct contact with fertilizers. In the east when from 1,200 to 1,500 pounds of fertilizer are used to the acre, it is generally all applied in the drill by means of a potato planter when the seed is dropped. When 2,000 pounds are used, 1,500 pounds are usually applied in the drill and 500 pounds along the top of the drill just before the potato plants appear. If from 2,000 to 2,500 pounds are used to the acre, one-half of it is generally applied broadcast and harrowed into the soil, and the other half is applied in the drill by means of the potato planter.

Fertilizers for northern regions should be compounded differently from those intended for use farther south where the temperature is higher. In experiments in Maine during the past season, the writer found differences of seventy-five bushels

of potatoes to the acre when the fertilizers had the same analysis, but were made up of different materials.

Fertilizers must also be compounded with special reference to the chief fertilizer deficiencies of the soils of a given region. In one section, for example, the potash content must be high, whereas in others the fertilizers may contain relatively little potash but high percentages of phosphoric acid, and moderate to high percentages of ammonia. It is of the utmost importance that considerable of the phosphoric acid be in soluble and readily available form.

In the course of experiments in Maine which have been conducted during the past three years, yields without fertilizers have usually ranged from forty to sixty and rarely as high as 120 bushels to the acre, whereas where fertilizers have been used, the yields have ranged from 260 to nearly 400 bushels to the acre.

If any one of the elements of plant food is deficient, the growth of the potato plants will be greatly retarded. There should be enough of all kinds of available plant food present in the soil at all times to meet fully the needs of the plants. The source of the potash in potato fertilizers is important when they are grown for starch or for the production of alcohol.

From the records of the potato yields of the states of Wisconsin and Michigan, it appears that the time is at hand when suitable commercial fertilizers can probably be used with immediate profit as well as with benefit to the unfertilized crops which follow in rotation. One can often see from a distance of nearly a quarter of a mile the better growth of clover along the line of the potato rows in Aroostook County, Maine, in fields where fertilizers has been employed in the drill.

#### HILLING POTATOES.

Whether to hill potatoes or not depends upon temperature, length of days, and similar conditions. Quite high hilling is practiced in Maine where it is to be commended, whereas in southern New England where the temperature is higher, where drought often prevails and where the days are longer, slight hilling is preferable.

#### INCREASE IN POTATO YIELDS DURING THE DYING OF THE STOCKS.

At the Rhode Island Agricultural Experiment Station, Dr. Hartwell and Mr. Damon have studied the effect upon the yield



of early and late harvesting where the potatoes were grown under the same conditions and were fertilized exactly alike. The first harvesting was made when the leaves were beginning to die and the last one when the vines were practically dead. The following are the results of the experiment:

Date of Harvesting	Bushels to the Acre
July 11.....	162
July 31.....	338
Aug. 5.....	371
Aug. 12.....	393

It will be seen from this table that the crop was nearly  $2\frac{1}{2}$  times as great when the potatoes were allowed to mature as it was when they were harvested when the leaves were just beginning to die. In northern regions where the growth of potatoes is likely to be stopped by frost, the hastening of maturity, whether by proper fertilization or budding is likely to be an important factor in increasing the final yields.

## Some Potato Disease Lessons from the 1915 Season

By R. E. VAUGHAN

Wisconsin College of Agriculture.

Late blight and rot were widespread because (1) diseased seed was planted; (2) the cool wet season favored its development.

Spraying with Bordeaux mixture, 4-4-50, controlled blight when applied thoroughly and applications commenced before disease started. Late and haphazard applications were useless.

Seed selection and disinfection for scab and rhizoctonia should be more generally practiced. Formalin and corrosive sublimate are the solutions used.

The Wisconsin Experiment Station has been paying special attention to potato diseases during the past season. In co-operation with the United States Department of Agriculture, a summer field laboratory was maintained at Waupaca where we had a man on the job from June to October. Field demonstrations and co-operative studies were carried on with several of the County Agricultural Representatives.



R. E. Vaughan  
Wisconsin Experiment Station

### LATE BLIGHT.

Late blight and rot was the most widespread and important disease of the year. Our demonstrations showed that the blight could be controlled by spraying with Bordeaux mixture, but in order to get satisfactory results it was necessary to make three to five applications, the first before any blight started. When the vines were not well covered with the spray owing to

carelessness or inefficient pumps, there was little control of the disease. A traction pump that will maintain 90 to 125 lbs pres-

sure on two to three nozzles per row is practically required to do good work.

The effect of frost on blight was very striking last season. In the northern sections, the vines were entirely killed in late August. On many of these fields the blight was just obtaining a good start, but owing to the fact that the fungus cannot withstand low temperatures it did not have a chance to reach the tubers and cause rot.

#### SCAB AND RHIZOCTONIA.

An examination of tubers at planting, digging and in the bins, together with the observation of frequent missing hills and the development of aerial tubers on the vines in mid-summer has convinced us that Wisconsin potato growers must give greater attention than ever before to selection and seed treatment for the control of scab and rhizoctonia. The experiments at our own station and in other large potato producing states show that seed tubers should be treated with formalin for scab and corrosive sublimate for rhizoctonia. The latter treatment is just as effective for scab as the formalin. The only reason why corrosive sublimate is not generally used is that it is a *deadly poison*. It is tasteless and odorless and therefore must be kept away from all pets and farm animals. As soon as the potatoes are treated, it should be thrown out. It is important to treat the tubers as early in the spring as possible to prevent injury to the eyes. If the eyes have started, a large percent will be killed. No cut seed should be treated.

#### DIRECTIONS FOR SEED DISINFECTION.

Formalin, 1 pint; water, 30 gals. Time, 2 hrs.

Corrosive sublimate, 4 oz. (Dissolve in 2 qts. hot water.)  
Water, 30 gals. Time, 1½ hrs.

Each solution may be used for three or four lots of potatoes.

#### SEED SELECTION.

Seed selection is always important in securing healthy potatoes because so many of our potato diseases are carried on the tubers, as late blight, scab, rhizoctonia, wilt, leaf roll, black leg, etc. The process of selection must begin in the field before the vines are dead since it is only at this time that diseases can be detected. Further selection can be made in the field at digging and later

in the bin. Selection for type and productiveness can be carried on at the same time as selection for freedom from disease.

Selected clean seed on clean soil means a clean crop.

*Question.* What do you use for spraying?

*Answer.* Bordeaux for blight combined with lead arsenate or Paris Green for bugs. Bordeaux is made 8 lbs. copper sulfate, 10 lbs. stone lime to 100 gals. water.

*Question.* What pressure do you want on your spray pump?

*Answer.* We find 90 to 125 lbs. satisfactory, so that there will be a fine mist spray which will coat both sides of the stems and leaves. When the vines are heavy, we have to drive over the rows twice in opposite directions.

*Question.* What is the best pump?

*Answer.* That is a hard question. There are several good pumps, also poor ones. A satisfactory pump that will spray from four to six rows will cost from \$75 to \$125 depending on capacity and fittings.

(EDITOR'S NOTE.—Mr. Vaughan's address was illustrated by about 40 lantern slides.)

## Studies of Health in Potatoes

By PROFESSOR C. L. FITCH

Ames, Iowa.

When Secretary Milward invited me to attend the convention I suggested that he name the subject on which I should speak, and he has made it "Potato Diseases." Now he says that the subject may be treated from any point of view. Let us take the cheerful side and talk of potato *Health*.



PROFESSOR C. L. FITCH  
Ames, Iowa  
Iowa Experiment Station

Leaf diseases and tuber diseases are important, but after all the great controlling factor in the potato industry is the health of the *roots*, on which the plant must depend for its supply of moisture and soil food.

For three hundred years our fathers have been moving west and south and north to newer lands. Population in general has been scattered. Potato production has been for the most part upon new lands. Soon in most of the country, there will be no more new lands on which to grow

potatoes, and we will have to get down to permanent conditions.

I find that there are three chief conditions of potato health: (1) freedom from infection, (2) moderate soil temperature, and (3) good soil aeration. We have done a lot of experimentation on these matters, but they need not be outlined here. They are proven matters of common knowledge. When soils are new many of them will grow good crops that later will not grow potatoes at all. Fertility is the great object at first; later, health becomes a foremost consideration and the older the potato industry, the

greater will be the relative value place upon the health and the less upon fertility of lands. Translated that means rich clay lands for potatoes must decrease in usefulness and lighter lands must increase in importance—the older the country to potatoes the more important healthy soils will be—that means sandy soils—and the better we can afford to feed them what manures and rotation and fertilizers they must have.

To be healthy soils must be well aerated, that means open grained soils—loose or sandy loam. Close grained soils are filled with water too easily: the particles are too close together. Clay loams may produce great crops of potatoes when new, or great crops in favorable years when the temperatures are moderate and the rainfall not excessive; but when old to potatoes or when temperature and aeration are poor these rich soils must fail. As compared to lighter soils, potato production on the rich heavy loams will be less permanent. There are many regions that have gone out of the potato deal on their richer lands. I will name four districts in Iowa and a dozen in Colorado where this has been the history. At the same time in Iowa, in particularly favored spots where potatoes occupy a small percentage of the area, potatoes have been raised on the same farm for many years. We may regard it as axiomatic that where a stock of seed has been long maintained that there the conditions for health have been good, whatever its latitude. In southern Iowa there are places where Snowflakes have been maintained for thirty-seven years, Bonanzas for twenty-nine, Champions for twenty-six years. At Auxvasse, Missouri, Early Rose were maintained by the same man for thirty-one years and then accidentally lost. But when these situations are analyzed they all include particularly favorable soil, naturally drained, and a very small area in potatoes thereabouts—which means great freedom from parasitic or fungus enemies—great freedom from spores in soil and on the soil, air-borne, or waterborne, or distributed by men and animals.

The more heat we have the mellower, deeper, better aerated soil we must have, and the fewer potatoes per square mile, to make potato growing permanent. Potato growing will always be important in states of medium latitude like Iowa, because of their value for home and nearby consumption. We will always get more money for our potatoes on the average than do growers in the north, and on the average our yields and shape will not be as good.

But as the country gets older for potatoes and as we need more of them, we are coming north for the bulk of them. The warmer the region the sandier the soil and the smaller acreage we must have. The cooler the region the richer the soils we can use for potatoes and the larger acreage we can grow in any one county or on any one farm.

And in the last analysis, the time is bound to come with this crop when health will be the most important consideration; and then our most open—our very light—sandy soils, being the most healthy for potatoes, will become worthy to be fed an abundance of clover, of natural manures, and of fertilizers, and will be our most permanent source of this plainest and commonest and finest of vegetables. As we study the needs of the potato crop, health stands out as the first and eventual consideration. There is a great future for the mellow potato lands of Wisconsin. Your development is only begun.

## Seed Potato Inspection Service in Wisconsin

By PROFESSOR J. G. MOORE  
Wisconsin Experiment Station.

(EDITOR'S NOTE.—Special attention is called in this article to the plan under which Seed Potato Certification will be conducted during the coming season (1916). Potato growers please note the last date for filing applications is July 1, 1916.)

In 1914 the Experiment Station inaugurated the work now known as the potato inspection and certification service. This work was placed in charge of the Department of Horticulture, as it was practically a further development of the extension work being done by that department for the purpose of improving the conditions of potato culture in the state. Professor Milward's investigations had revealed the fact that there was a very wide range of difference in the character of the potatoes being produced under the same varietal names and also, in many instances, the same variety being grown under a number of different names. He also found that the stock being sold for seed purposes was badly mixed as to variety and not infrequently showed considerable disease which was rapidly lowering the reputa-



PROFESSOR J. G. MOORE  
Wisconsin Experiment Station

tion of Wisconsin potatoes in the important potato markets. It was apparent that some system which would help eliminate these unsatisfactory conditions and improve the reputation for Wisconsin potatoes was a highly desirable thing. A system of inspection and certification in vogue in Germany and recom-



mended by Dr. W. A. Orton of the United States Department of Agriculture and modified to meet, as nearly as possible, the needs of Wisconsin conditions was placed in operation. During the first two seasons the system was largely on trial, but its success during that time seemed to warrant its continuation.

During 1914 and 1915 a considerable portion of the expense of the inspection was borne by the Experiment Station as a part of its extension work. Having proved out the system, however, the officials in charge of the work believe that as this service is largely a matter of individual rather than community benefit and as the party receiving the inspection service is the one who most largely profits by its operation, that the time has now come when those receiving the benefit should carry the cost of such service. In view of the fact that only a part of the expense has been borne in the past by the parties receiving the service, the Experiment Station finds it necessary to make some changes in the fees. It should be clearly understood by those desiring to have their crop inspected that the fees charged are not designed to return a profit to the Experiment Station, but merely to meet such expenses as are actually incurred in furnishing efficient service.

In accordance with the above decision the Experiment Station, through the officials in charge of the potato inspection service, announces that the Regents of the University have put into effect the following scale of charges for this service during 1916:

One to four acres inclusive (two inspections) ...\$6.00

Five to eight acres inclusive (two inspections) .. 9.00

In excess of eight acres (additional)..... 1.00 per acre

One-half of the fee up to and including that for eight acres is payable on application for inspection which must be made in writing *before July 1, 1916*. For acreages in excess of eight acres the payment to be made on application is \$4.50. In case an applicant withdraws before the second inspection, this portion of the fee is retained to cover the cost of the first inspection; The remainder of the fee must be paid on or before Dec. 1, 1916. If a second inspection is made, this fee must be paid whether a certificate is issued or not.

In case applications for inspection are received from such portions of the state as are not readily within the route laid out for the inspector, after all applications have been considered, the Station reserves the right to refund the amount paid upon appli-

cation, unless by mutual agreement with such parties the grower is willing to defray the extra cost of the service.

It is important that all persons desiring the inspection file their application prior to July 1st, as applications received after this date cannot be accepted.

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## A Field Report on 1915 Potato Inspection

By J. W. BRANN

Of the State Potato Inspection Service.

Seed potato certification in Wisconsin was inaugurated in 1914 and as a result about 30,000 bushels of good seed stock were placed on the market. The experiences of last year were of con-

siderable value in conducting the work during the past season. This year, regardless of the unusual conditions as to weather and disease, the inspection service is pleased to report that over 50,000 bushels of certified stock are now in the hands of Wisconsin growers.



J. W. BRANN  
Wisconsin Experiment Station

The inspection work is divided into (a) summer inspection of the growing crop (b) bin or field inspection of the harvested crop (c) a third examination of the stock whenever special conditions demand it. The 1915 summer inspection commenced on August 6th and continued until September 20th. The greater portion of the bin inspection

was completed by November 12th. The work involved the following considerations:

*Summer Inspection.* Source of seed; stand; general soil and cultural conditions; varietal purity; disease conditions as to

black leg, rhizoctonia (black scurf) and allied troubles; early and late blight and injuries resulting from insects, arsenicals and frosts.

*Bin Inspection.* Involved varietal purity; trueness to type; market conditions as to size, maturity, quality, yields; diseases of the tuber as to common scab, rhizoctonia (black scurf) and late blight rot.

Varietal purity and disease conditions were the two chief points which figured in the granting or withholding of certificates. Late blight rot, general poor cultural conditions, varietal mixtures, black leg, black scurf and common scab herein placed in the order of their importance were the factors that resulted in the rejection of the seed stock of sixty-six growers.

#### OBSERVATIONS DURING FIELD INSPECTION.

*Varietal mixtures.* In a few fields mixtures varying from one to five per cent were found. The most common were Green Mountain in Rural New Yorker fields and vice versa. The tuber characteristics of these two varieties are somewhat similar and this accounts for the conditions that prevailed. Nine fields were rejected because of varietal mixtures.

*Cultural conditions.* In general these were fair. Weak stands, lack of vine growth, poor soil conditions and tilth figured in the elimination of eighteen fields.

*Disease conditions.* Black leg was present in at least thirty per cent of the fields in amount varying from one-half to two per cent.

*Rhizoctonia (black scurf).* Rhizoctonia and allied troubles were found in at least twenty per cent of the fields and proved very serious in some.

*Early blight.* The Irish Cobbler and the Triumph varieties appeared to suffer worse from this disease than did the Rural New Yorker and the Green Mountain.

*Late blight on foliage.* This disease was by far the most destructive disease of the potato during the season of 1915. The cool, moist weather conditions that prevailed were favorable for its development. By killing the spores of the late blight fungus in badly affected fields, the serious frosts of August 25th to 30th proved beneficial indirectly in preventing the disease organisms from infecting the tubers and producing the late blight rot.

*Frost injury.* The frosts herein mentioned did considerable

damage in a number of the northern counties by killing the foliage before the tubers had attained a fair size. Much of the stock affected, although small, will, if it is healthy and sound, make good seed. Later freezing just preceding harvest was severe enough to damage the tubers and made careful sorting at harvest time necessary.

#### BIN INSPECTION.

*Varietal mixtures.* In a number of cases the bin inspection revealed mixtures which indicated that the grower had failed to carry out carefully the instructions for rouging. In such cases a certificate was not granted.

*Type, market condition and quality.* Lack of quality and maturity coupled with any extreme departure from the correct type figured in the refusal to grant certificates to a number of growers.

*Common scab.* This disease was not very serious the past season in the stock open for inspection. Powdery scab has not been found in Wisconsin but all growers should be on the alert.

*Rhizoctonia (black scurf) on tubers.* This disease was quite generally distributed throughout all sections of the state and appeared to be the worst on the acid soils.

*Late blight rot.* Damage from late blight rot was unusually marked the past season in several sections to the state. In many cases as high as thirty per cent of the tubers were affected. Upwards of twenty growers were refused certificates because of a high percentage of infestation in the stock. Careful sorting of seed that contained a small per cent of rot, in a number of cases, brought the stock up to the requirements for certification.

Field observations indicate that the Green Mountain variety is somewhat more susceptible to the late blight rot than the Rural New Yorker.

#### GENERAL CONSIDERATIONS AND ADVICE TO GROWERS.

The inspection service aimed at all times to impress upon the grower the necessity of holding strictly to the standard required under the certificate.

Information was given the grower during the field and bin inspections relative to foliage and tuber characteristics of the standard varieties of potatoes. Special instructions were also given that would assist in the detection of diseases of both foliage and tuber.

The knowledge thus obtained placed the grower in a more favorable position to carry out the directions in roguing for varietal mixtures and the diseases such as black leg, rhizoctonia (black scurf) and allied troubles. Each grower was instructed to sort carefully for common scab, rhizoctonia (black scurf) and late blight rot. The inspection service requires that all coarse stock and such as did not conform to the standard for the variety should also be removed.

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Following is submitted a list of growers who received certificates of inspection this year. Those who desire seed potatoes should write direct to holders of certificates.

Guy Anderson, Ogdensburg—Rurals and Irish Cobblers; G. E. Anderson, Mosinee—Rural New Yorker; Wm. Bartlett, Barron—Burbank and Green Mountain; Chas. Beard, Elcho—Rural New Yorker; C. A. Beggs, Cameron—Green Mountain, Russet Burbank, Early Ohio; H. Blumenstein & Son, Woodruff—Green Mountain; R. T. Bonner, Antigo—Rural New Yorker; Hall Brooks, Tomahawk—Green Mountain and Irish Cobbler; Geo. Burkhart, Rhinelander—Green Mountain; C. C. Boyce & Son, Waupaca—Rural New Yorker; H. W. Crane, Weyauwega—Rural New Yorker; O. A. Crowell, Almond, Rural New Yorker; J. B. Cook, Almond—Rural New Yorker; F. S. Campbell & Sons, Three Lakes—Rural New Yorker, Irish Cobblers, Triumph and Green Mountain; R. E. Chaffee, Strongs Prairie—Rural New Yorker; Frank Constance, Waupaca—Rural New Yorker; C. P. Coon, Bruce—Green Mountain and Early Ohio; G. P. De Busman, Augusta—Rural New Yorker; E. M. De Long, Woodruff—Green Mountain; Fred Dunbar, Weyauwega—Rural New Yorker; F. S. Durham, Wautoma—Rural New Yorker; Anton Follstad, Elcho—Rural New Yorker; H. C. Frihart, Weyauwega—Rural New Yorker; Moulton Goff, Sturgeon Bay—Rural New Yorker and Green Mountain; J. D. Grandine, North Crandon—Peerless; James Gunderson, Wautoma—Rural New Yorker; K. T. Hazelberg, Barron—Burbank and Green Mountain; J. Helmbrecht, Deerbrook—Rural New Yorker; C. O. Heldstab, Rice Lake—Green Mountain and Burbank; W. J. Hinker, Oconto—Rural New Yorker; Glenn Hopkins, Ogdensburg—Cobbler and Rural New Yorker; G. D. Hoppe, Tripoli—Green Mountain; Soren Hoy, Waupaca—Rural New Yorker; Huser Brothers, Grand Rapids—Rural New Yorker; Taylor Jackson, Webster—Green

Mountain; Soren Jensen, Waupaca, Rural New Yorker; Emil Kapitzke, Weyauwega—Rural New Yorker; August Kloss, Grand Marsh—Peerless; Ed. Kringle, Rice Lake—Rural New Yorker and Burbank; Gus Kringle, Rice Lake—Rural New Yorker and Burbank; Ernst Kruse, Merrill, Green Mountain; B. M. Louk, Three Lakes—Rural New Yorker; E. L. Luther, Rhinelander—Green Mountain; C. P. Lyster, Earl—Rural New Yorker; Elmer Lytle, Bradley—Green Mountain; J. D. McKeever; Lena—Rural New Yorker; O. H. McLaughlin, Rhinelander—Green Mountain; Chas. Marshall, North Crandon—Russet and Rural New Yorker; H. J. Mattson, St. Croix Falls—Russet Burbank and Green Mountain; H. H. Middendorf, North Crandon—Rural New Yorker; Morgan Produce Co., Ladysmith—Green Mountain; E. F. Munsch, Weyauwega—Rural New Yorker; Fred Nelson, North Crandon—Rural New Yorker; Oconto Company, Oconto—Rural New Yorker; Frank Oppor, Weyauwega—Rural New Yorker; Hans Peterson, Clear Water Lake—Green Mountain; Peter Peterson, Amherst—Green Mountain and Rural New Yorker; Pick Brothers Co., West Bend—Rural New Yorker; Adolph Podoll, Oxford—Peerless; Wm. Prueser, Bloomville—Green Mountain; Amos Radcliffe, Eagle River—Rural New Yorker; Albert Radtke, Rhinelander—Green Mountain; C. J. Rasmussen, North Crandon—Rural New Yorker; Frank Reburg, Laona—Rural New Yorker and Green Mountain; L. A. Rogers, Nashville—Rural New Yorker; Jos. Samz, North Crandon—Rural New Yorker; J. P. Schaenzer, Wabeno—Rural New Yorker; Henry Schroeder, Crivitz—Rural New Yorker; Shuster & Miesen, Soperton—Rural New Yorker; Dr. J. G. Seidel, Warrens—Rural New Yorker; G. M. Sheldon, Tomahawk—Early Ohio, Rural New Yorker and Green Mountain; Lloyd Skaife, Frederick—Green Mountain; Louis Skoglund, Amherst—Rural New Yorker; F. J. and A. H. Smith, Merrill—Green Mountain; J. T. Somers, Chetek—Green Mountain; Otto Sprague, Merrill—Green Mountain; Chas. Stengl—Rural New Yorker; Victor Streator, Winegar—Green Mountain; Hans Teppen, Colfax—Green Mountain; J. Trapp, Arbor Vitae—Green Mountain; E. E. Thwing, Augusta—Rural New Yorker; W. A. von Berg, Mosinee—Green Mountain and Irish Cobbler; W. H. Webb, Brule—Green Mountain; C. Wiegand, Crandon—Green Mountain; O. C. Woodward, Weyauwega—Rural New Yorker; Ira Woods, Mosinee—Green Mountain; G. T. Wyckoff, Crivitz—Rural New Yorker; A. O. Wilson, Augusta—Rural New Yorker.

## Standardizing Wisconsin Bred Seed Grains

By PROFESSOR R. A. MOORE  
Wisconsin Experiment Station.

(EDITOR'S NOTE.—We print herewith a brief extract of the address delivered before the Convention by Professor Moore. Professor Moore has directed the work of grain breeding in Wisconsin from its beginning and during the course of his address cited many illustrations of how this work had been the means of keeping young men and women interested in farm work.)

The work of grain breeding has been in progress at the Wisconsin Station since 1898 and experiments clearly prove that marked improvement can be made with all grains and forage plants by following definite lines of systematic breeding.



R. A. MOORE  
Wis. Experiment  
Station

The plant breeder has it within his power to make great strides and with his opportunity of dealing with millions of individual plants can accomplish in a single generation the improvement that has taken centuries to accomplish in animal breeding. Only twelve years ago Wisconsin was trying to grow a hundred scrub varieties of corn, from fifty to one hundred varieties of barley, oats, rye, wheat, etc. No distinct varieties noted for quality and yield were known to our farmers. Corn, the crop upon which so many of our dairymen were dependent, the seed with few exceptions was annually bought in accordance with the scoop shovel method, resulting in the farmers getting shelled seed corn, usually several varieties, to be planted together in the same field.

In the barley region it was found that often bearded, beardless, hulless, two rowed, four rowed and six rowed varieties were found in the same field. Different varieties of barley require different periods of time for germination, some of the varieties will germinate in two days, some in four days, some in six days and some intermediate. The malster was puzzled as he desired to have a barley for malting that the kernels would all sprout at approximately the same time.

Also, the different varieties of barley ripen at different periods and the farmer was forced to cut at a time when some of the barley was green and some overripe. By so doing he suffered

another loss which took from him a large portion of that which otherwise would have been clear profit. Not only the farmer had to suffer a loss but every community and town from which barley was shipped suffered from the shortage of funds returned for the season's crop.

Then, all crops suffered in quality and yield per acre from the sowing of the scrub seeds of no uniform breeding. To correct the above defects, and many others, the College of Agriculture took up the work of breeding pedigree seeds which now far surpass in yield and quality the grains formerly sown upon our farms. I have not the time to dwell upon the details of the system of small grain breeding pursued but will say that it has taken fifteen years' time to bring forth the pedigree seed grains which we are now shipping to all parts of the earth. We have also bred four standard varieties of corn.

Pedigree barley, winter rye, winter wheat and oats have been bred at the Wisconsin Station. Four standard varieties of Wisconsin corn have been bred through a course of breeding known as the ear-to-row method. The variation of yield between ears of corn of the same variety is exceedingly great. The yield also of seed ears, ears that are sufficiently good to retain for seed is greater still. By careful breeding it is possible to get a variety to yield three and four times as many seed ears as the variety would yield if no breeding were put upon it.

#### ORGANIZATION AND OPERATION OF THE WISCONSIN EXPERIMENT ASSOCIATION.

Early in the work it was apparent that after the select and pedigree varieties of grains were bred there was needed a force of careful farmers to grow and disseminate these grains. To have such body of helpers for close co-operation the Wisconsin Experiment Association was organized Feb. 22, 1901. This association is composed of young farmers who have been trained in the College of Agriculture and are thoroughly competent to handle the pure bred grains in the best possible way. While the Association is an independent state organization, it co-operates very closely with the College of Agriculture in all of its work. Through this body of workers the Experiment Station makes its dissemination of pure bred seed grains and carries on tests with fertilizers, soils, seed grains and general forage plants.

After ten years growing and dissemination of the pedigree



oats, we estimate that over two-thirds of all the oats grown in Wisconsin are of that variety. In the same way has the pedigree barley been disseminated until over three-fourths of all the barley in the state is of that one breed, and Wisconsin grows one-eighth of all the barley in the United States.

Four varieties of corn have been bred and disseminated; namely, Silver King, Clark's Yellow Dent, Golden Glow and Wisconsin No. 8, which are now being eagerly sought by the farmers and seedsmen in Wisconsin and adjoining states.

We now have a membership in the association of approximately two thousand, nearly all of whom are active seed grain growers and have equipped themselves with all the conveniences for handling the select and pedigree seed grains in large quantities. By following the method of having these seed grain centers established in practically every township of the state it brought the select grains in close proximity to the farmer where he would have an opportunity to study the grains while they were growing and see them threshed before deciding to grow them on his own farm. Many farmers will study a cornfield or a grain field beside the road when it would be a hardship for them to study corn from the printed page.

On account of the large membership of the Association scattered so widely throughout the state it was deemed advisable to organize local associations in those counties that had fifty or more regular members. Forty-seven counties are now organized. These organizations are known as County Orders of the Experiment Association. The secretary of the county order is appointed as farm inspector for his respective county and his duty is to visit all members of his order and all farms upon which pure bred seed grains are grown. He is expected to give advice to the local members in regard to facilities for growing and handling seed grains and report to the State Association. The state association also has a regular inspector who visits and inspects the pure bred seeds grown by the members of the association. If grains are approved by the inspector the members are allowed to use the registered state tag of the association.

To reach the boy upon the farm the Young Peoples pure bred grain contests were organized in 1906, which had for its purpose the training of the boy in the growing of pure bred seeds and at the same time disseminate extensively throughout our state the pedigree seeds. The work has only been in progress

eight years but its popularity and expansion are great. Beginning in one county eight years ago with only one seed growing contest in which five hundred boys took part the work increased at such a rapid rate that last year fifty contests were run in forty-four counties of the state and two thousand boys and girls took part in the work.

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## Potatoes and Community Finances

Extract of Address delivered at the State Convention

By GEO. T. VORLAND, Banker,  
Colfax, Wisconsin.

What the gentleman who assigned me this subject meant by community finances I do not know, but every rural banker must try to solve problems of his own surroundings in a day that suits

the needs as he sees them, and I may say that if the banker is a live one the community will reflect his activities and judgment to a smaller or greater extent.



GEO. T. VORLAND  
Banker  
Colfax, Wis.

By a rural banker's activities I do not mean that he should be financially interested in many enterprises. On the contrary he should absolutely sever all connections with other business except his bank. He should be under no obligations to any one of his borrowers, and should treat every transaction on its merits. You hear a great deal about rural credit, and the need of its extension—the main worry is rather on the other side—how to curb or regulate it so that it

does not drive the man who indulges in it too freely off the farm.

I maintain that a bargain wherein only one of the contracting

parties is benefited is immoral—hence if a farmer borrow money to pay the storekeeper, the butcher and the feed man, the farmer is not benefited and the banker who loans money for that purpose is guilty of gross negligence of his duty to the community.

The farmer should raise fodder, then he should borrow money for cattle, brood sows, first class seed, and for the purpose of breaking new land if he has any. I might say that every farmer in our community has a great deal of good land to be brought under the plow. And here is where I have found potatoes to play an important part in our method of diversified farming. Because it has been proven time and again that a farmer can clear, brake and raise a potato crop on the land, in one season and the potato crop will more than pay the entire outlay.

A rural banker who will not loan an honest farmer money for this purpose is a detriment rather than a benefit to his community and knows very little about how to finance a rural district.

Community finances should not mean, in my opinion, that interest or responsibility should be pooled, but rather that the individual who merits credit should have it for such purposes as will enable him to help himself. In my opinion, the culture of potatoes should be greatly encouraged in newly settled communities where there is a large acreage of new land to be subdued every year, because potatoes will bring cash returns and only short credit is needed.

It is not necessary to go into the question of farming extensively in my subject, but I wish to express my idea of financing a community in such a way that all honest men whether of small or large means have a fair, and I might say equal, chance of success.

1. Every man should have access to credit commensurate with his ability to carry out the project for which he wants the money and this is not so very difficult to determine for a student of the people he deals with.

2. The rural banker should know what the man of limited credit wants the money for, and here is where the banker's knowledge of farming should be extensive and broad.

I spend two weeks every winter at the agricultural school at Madison, not because I want to engage in farming, but because I am engaged in banking, and I want to be capable of recognizing a progressive farmer when I see him.

Supposing a farmer should come to your local banker and ask for a loan of \$200 to buy a sire for his herd and your banker should advise him to buy his neighbor's scrub for \$40 because under the old reasoning he would have five farmers' notes for the same amount of money instead of one. That was good solid financial reasoning some years ago but is it good today? People, if your local banker is of that class, take up a collection and send him to Madison next winter. It will pay you in dollars and cents 100 per cent.

Land values are going up and hence the beginner today must pay interest on larger sums than the beginner of years ago, and so, it becomes necessary to increase the productiveness of the farm, improve the grade of stock, and improve the quality of produce. Also, learn how to prevent disease of cattle, horses, hogs, grains, potatoes, tobacco and other products of the soil, thereby insuring a sure and reasonably steady income.

The only safe way to judge progression or retrogression is by comparison and I take it that that is one of the purposes of this convention. I hope that more and more, the farmer will be awakened to benefits to be derived from such exhibits as this one and make these conventions so large that only the canopy of heaven will hold them.

The people of this state, through its university and agricultural college are holding out a helping hand to all of us, it is for us to take advantage of the assistance offered and now, inasmuch as Mohammed would not come to the mountain the mountain is coming to Mohammed—each county may now have a representative from the agricultural department at cost so small that it is hardly worth the name "cost."

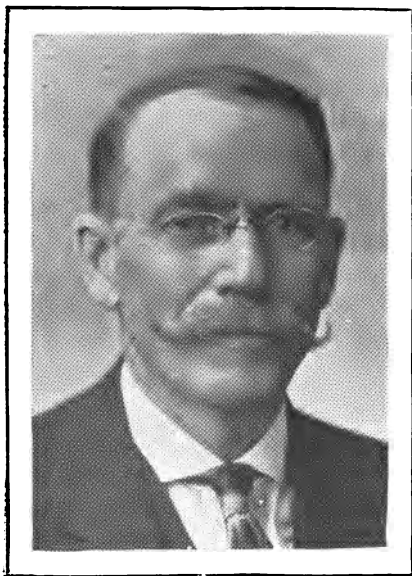
Let the farmers of this great and good state of Wisconsin wake up to their opportunities now, and our children and children's children shall not want in the days to come.

I am so pleased with this convention that I should like to have every potato grower here present make a solemn promise that he will bring one neighbor with him to the next convention—will you do it?

## Recommendations for Improvement at Wisconsin Potato Loading Stations

By C. A. BEGGS  
Cameron, Wisconsin.

One of the most important features of the potato industry and, perhaps, one that is the most sadly neglected is the method of handling potatoes at the loading stations. This is due very



C. A. BEGGS  
Cameron

largely to the lack of co-operation among shippers and among shippers and growers.

Many thousand dollars are lost annually by reason of improper grading of potatoes which results in rejections at destination of shipments. This creates and cultivates a strong desire on the part of the shipper to take as wide a margin of profit as possible to take care of these losses. This looks to the grower to be an exorbitant profit at times and it would be if there were no losses by reason of rejections, due to in-

ferior stock being loaded. Yet the percentage of shippers who have made a success for a term of years is small due to the fact that they are dealing in an article that has no uniform grade.

In working out a cure for this existing and costly evil I would not want to put any additional burden on the grower, as quite a large percentage of the crop is handled direct from the field to the warehouses or cars, and at a season of the year when the growers are taxed to the limit to take care of the work and expense of harvesting and marketing the crop. The burden of expense of proper grading should rest with the shipper aided by a

law which makes it compulsory on the part of the shipper. I would make the application of such a law as mild as possible by having it apply to minimum size only, as, when shippers are obliged to grade out the small potatoes up to a certain size, they will also grade out the rotten and inferior stock to a certain extent. This would eliminate at least three-fourths of the losses and enable the shipper to handle them at a much smaller percentage of profit, making a saving to both the grower and the consumer.

What would the grain industry be without a law governing grades? What would the butter industry be if it were not for the co-operation of dealers and producers which put it on a creamery basis and a law protecting it from the onslaught which would be made on it through imitation by oleomargarine? Instead of the state of Wisconsin producing about one-sixth of the butter of the nation it would be relegated back to a place with other states of much less importance. If we had attempted all of this by first trying to educate the people to it without the aid of any law it would have taken generations and the same thing is just as true of the potato industry. As long as anything and everything can be dumped on the market, just as long will these conditions exist.

The talk that the dealer should pay more for a load of good potatoes than for a load of poor stock has been handled until it is worn threadbare. No one knows it better than the shipper and most of the growers want to bring good stock to the market and most dealers want to handle only a good grade, but the lack of co-operation and a grade law puts them at the mercy of the unscrupulous loaders, who will buy that inferior stock and pay the same price for it as they are buying on commission of a certain price per bushel.

Some growers might think that they would have too much of that inferior stock on their hands and no live stock to which to feed it, but why should they worry if the better grade brought as much or more money than the whole. Whenever there is a sufficient amount of refuse accumulated in any section of the country, invention and investment will turn it into money.

Potato refuse should be handled quickly, as it will not keep and no farmer can afford to keep the necessary amount of hogs to consume it. This cull stock should be manufactured into denatured alcohol or some article that could be used for motor power

so that we would not be quite so much at the mercy of those *John Dare Rob Us Corporations* who manufacture gasoline and other like products.

I am a strong advocate of co-operation among dealers and growers, so much so that about a year ago, I, with the aid of others, organized about twenty potato growers organizations and later on was elected president of the County Potato Growers' Association. Interests that are mutual, like shippers and growers of potatoes, should be unified and working harmoniously together. Life is a one man affair, but the greatest success is achieved by a large number of men working together. I heartily endorse any line of education that will help better these conditions, but a law covering a fixed standard of grading, applying to minimum size only, would do more at one stroke than can be otherwise accomplished in years.

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## Grading and Marketing Problems of the Southern Idaho Producers Association

By S. J. DONALDSON

General Manager, Pocatello, Idaho.

Our Association is composed of more than forty local associations situated at the principal shipping sections of the state. These locals are operated by a board of directors elected by the members.

The membership of this Association consists of the locals together with the two thousand (2,000) potato growers, who are under contract, and who hold membership both in their local Association and in this central by virtue of a tri-lateral contract made between the grower, the local and this central; under the terms of which the grower's potatoes are delivered to the local, and shipped to this central, which acts as a selling agency for all the locals.

Last year we shipped eighteen hundred and forty-seven (1,847) minimum cars of potatoes, which is five hundred (500) cars more than we shipped the year before. We do not expect to increase our shipments this year for the reason that this state has less than sixty per cent of the amount of the crop raised last year.

This state has been handicapped this year in the matter of upholding prices, by reason of the fact that the Federal government, until the report of this month, has persisted in reporting the Idaho crop larger than last year; in the face of the fact there is not an informed potato grower in the state who hasn't known for the past three months that the state would be at least two thousand (2,000) cars short.

The writer has just returned from a trip throughout the state, and finds that many of the best informed people of the state regard our crop as only half as much as was produced last year. We cannot help but remark right here that we are convinced that these exaggerated reports of the state's production were purposely padded to some extent by speculative track buyers who had large cellar capacity to fill, and whose interest naturally was in suppressing the price of Idaho potatoes until such time as their storage was filled.

We congratulate ourselves in having made considerable progress in the grading of potatoes. In the first place, we have adopted and are using a standard size, new bag, being a 36x50 hemmed top, nine-ounce burlap bag, holding a little more than two bushels, or 120 pounds; that is, with enough over to allow for selling as two bushels after the natural shrinkage.

During the past two years of our operations, we put out most of our stock under what was called the "Blue Grade." This provided that the stock be carefully graded over a two-inch screen, and that all potatoes be removed from the grade which contained any imperfections such as would injure them from a commercial standpoint. We are sorry to be forced to admit that we were not always successful in holding our growers to put up this grade under all of its limitations. At the points where we had warehouses and power graders, which were operated by our own people, we succeeded in getting the grades just as we wanted them, but at many smaller points the growers were compelled to do their own grading, and very few have the moral courage to eliminate the stock sufficient to make a proper grade.

This year we have installed at our principal loading stations a power grader containing a chain elevator which carries the tubers from a hopper onto a long table, where pickers remove singly and by hand each commercial potato from the conveyor on to another chain conveyor, carrying a single potato in each compartment, by which it is carried to the end of the table and



automatically sized according to weight, by a gravity process, into the different sizes showed in the crates we are sending for exhibit purposes.

Of course, the gravity method is the only one by which Burbank shaped potatoes can be anyways near accurately graded, and by this process the potatoes are sacked according to the following sizes: four to six ounces, six to eight ounces, eight to twelve ounces, twelve to sixteen ounces, sixteen to twenty ounces, and from twenty ounces up. Now, this is what we have been able to accomplish in the way of grading.

No doubt some will be interested in knowing what the advantages have been in putting up this kind of stock. As a concrete illustration, we will advise that last week the growers were being paid by track buyers sixty-five per hundred for the best grade of Gem potatoes, while our potatoes graded in this way brought on a dull market ninety cents for the grades up to eight ounces, \$1.00 for the eight to twelve ounces, and \$1.10 for the stock above twelve ounces. There were more than six times as many offers for this stock at these prices than we were able to supply.

We consider one of the principal needs of the growers organizing themselves together in an association is to be able to get prices for the well graded stock. We are informed from various sections of the country that the speculative buyers never pay more than five per cent per cwt. premium no matter how well graded the stock may be. Of course, they handle stock that we would not accept, paying about the same for it that they do for the good stock. On this they undoubtedly lose money expecting to make it up on the better graded stock. As can readily be seen, this is no incentive for growers to take pains in putting up the class of stock which the trade demands.

In consideration of our long freight haul, it is especially necessary that the growers cease shipping culls on which they have to pay freight, and which has to be thrown away after being shipped across the continent. Since we commenced grading this season, we have not had a single turn down or rejection. This is also quite a benefit to a shipping organization.

In the matter of these machines, we are using the entire output of the factory this year, with the exception of one grader which is in use at Hamilton, Montana.

We are not informed whether the Wisconsin Potato Growers

Association is a marketing organization, or simply a producers' organization. Ours is both, and the co-operative marketing is very essential in our state, while it may not be so much so in yours.

Mr. L. C. Aicher, of Aberdeen, Idaho, is sending you some of our sized stock, which is put up under the rules of this Association; he being a member of the organization.

We have mentioned above some of the successes and accomplishments of the organization, and it might not be out of line to mention some of the problems we have had to confront, and which have not been entirely overcome.

A great many growers do not understand that any individual or concern handling potatoes frequently, and for various reasons (especially in the rush season), are compelled to make sales which are not satisfactory. Of course, the speculative buyer pools this loss against his good sales, and says nothing; but where a grower's only car of potatoes bring an unsatisfactory return (unless he has a thorough understanding of the principle of co-operation), he is likely to become dissatisfied, and give wide publicity to his misfortune. In a case of this kind, there will be more heard from this grower than from the ninety and nine satisfied growers, whose returns netted them perhaps 10 or 15c. per cwt. more than they could have received on track at the time of shipping.

To meet this condition, we are contemplating making a small charge per cwt. next season, which will be carried as an insurance fund, to make up the loss of the unfortunate grower above described. This is preferable in our state to pooling, for the reason that pooled sales cause considerable delay in getting the returns to the growers.

## The Rural New Yorker and Green Mountain Types

By C. W. WAID

Michigan State Potato Association.

The Rural New Yorker No. 2 was originated by E. S. Carman, former editor of the Rural New Yorker and introduced to the subscribers of his paper in 1888. It was offered for sale by J. M. Thorburn & Company in 1889. Mr. Carman claimed it was a seedling raised from seedlings grown for several generations.

The Green Mountain was originated by O. H. Alexander, Charlotte, Vermont, in 1878. He claimed it was a seedling from a cross between Dunmore and Excelsior. It was introduced by J. A. Everitt & Company in 1885.

According to Dr. Stuart, the Green Mountain is more liable to be injured by dry weather during August and September than is the Rural New Yorker. The reason for this is that the Green Mountain sets tubers earlier than the Rural and thus the dry weather is more liable to come when the Green Mountain is setting tubers and effect the yield by reducing the number of tubers set.

The fact that the Rural sets tubers late and makes very rapid growth late in the season also accounts for the tendency of this type to grow hollow.

Because of these facts the Green Mountain is not adapted to so wide a range of territory as is the Rural. Judging from the past, the Green Mountain is best suited to sections where the rainfall is most evenly distributed over the growing season.

In describing the Green Mountain, Dr. Stuart gives the following: Vines vigorous, healthy, considerably branched; foliage heavy, medium green; stems light green; flowers abundant, white; tubers large, short-oblong to oblong, broad, flattened; eyes medium in number and size, shallow to medium in depth; skin creamy white or buff white, occasionally splashed with russet toward seed end, generally well netted.

His description of the Rural New Yorker No. 2 is as follows: Vines thrifty and strong; tubers oblong, inclined to round or round-oval, rather flattened; eyes few, shallow; skin pure white, netted, flesh white.

## Field Work in Potato Improvement

By W. D. JUDAY, Rhinelander, Wisconsin,  
County Agricultural Agent for Oneida County.

F. S. Campbell, our honored potato man of Three Lakes has fittingly said of the potato exhibit game: "When we are going into a race we always want a good horse but we must not forget

that there is a lot in the jockey." He simply meant that we must first be able to grow exhibit stock and then be able to show it to the best advantage after it is grown. Growing and showing are of equal importance and this article will deal with those two phases of the work.



W. D. JUDAY  
County Agent For Oneida County

Potatoes of exhibit calibre are produced only on mellow, fertile, loamy soils which contain an abundance of vegetable matter. A heavy clover crop turned under on a sandy loam soil the fall previous to planting makes conditions ideal for producing high quality tubers.

In this good soil should be planted good seed, which should have been selected in the fall at digging time from high producing hills. See that all tubers are free from external signs of disease and that they are true to the type of the variety being planted.

By all means treat the seed. If the black scurf (*rhizoetonia*) disease is bad use corrosive sublimate; if not, formaldehyde is the safer solution. If possible treat before many sprouts have formed.

A thorough use of Bordeaux mixture is to be recommended in nearly all cases. It renders the poison spray more effective, pre-

vents early and late blight and keeps the vines in a green thrifty condition throughout the whole season.

Digging is next and at this time we must select our exhibit stock. Careful hand digging is best as few bruises will result. If a digger is used see that it is run deeper than necessary, so that a considerable quantity of dirt passes over the apron with the potatoes. This will lessen the bruising considerably.

After being dug the potatoes should be allowed to dry nicely in the sun. We should then walk along the row and select all those tubers which are true to type, free from disease or injury, smooth, of even size and shape and weighing about ten ounces. Select at least three times as many as will be required for the sample. Wrap each selected tuber in paper, pack carefully in a basket, and store in a dark, cool place until it is time to prepare the exhibit for the show. Then unwrap the potatoes and with a soft brush remove all the dirt. This careful brushing will also give the tuber a desirable luster which generally attracts the judge and leaves with him a good impression of the first appearance of your sample. Now, with all the brushed potatoes before you, size up the whole lot and decide upon the type, shape and size of tuber you are going to choose for your sample. Then pick out the required number. Again size up the whole bunch to see if any substitutions can be made which will increase the value of the selected lot. Place on exhibit in a neat package and arrange the tubers so as to give the sample the best possible appearance.

In preparing a county exhibit the same general principles of preparation should be kept in mind. Neatness and uniformity are important. The tubers should be arranged so they are easily accessible to the judges. Emphasize quality rather than quantity and then decorate the booth so as to show the exhibit to the best advantage.

In getting the stock together for a county exhibit the value of a county potato show cannot be overestimated. By having all the show potatoes brought to a central point we can select out only the best samples and in this way have much better quality in the exhibit. This also gives us a definite idea as to the exact size of our exhibit and we can have more time to plan for the arrangement and decoration of a booth with the number of potatoes on hand. Then too it gives a large number of farmers who would never see a state potato show some idea as to how to select and prepare a potato exhibit.

The average farmer will think it hardly worth the while to take the pains necessary to grow and prepare a winning sample of exhibit potatoes, yet as a matter of fact such a thing does pay. We have not only increased the quality but we have also increased our yield. Each of these means an increased profit. Another thing, the potato show affords an opportunity for a potato grower to get the most effective advertising at a very cheap rate and whether a man sells his crop for seed or for table stock this advertising will mean money to him. Add to this the pride each man should feel in winning for himself and his county, and we certainly have a strong enough incentive to make every potato grower want to grow and show a winning potato.

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## Market Standards

By C. E. BROWN  
Elk River, Minnesota.

I believe the two greatest problems now confronting the potato growers are Standard Varieties and Standard Grades. There is hardly a potato on the market but that has been substituted with potatoes of inferior quality: Namely, the Rose and Burbank. Almost every pink skinned potato has been sold for Rose.

The Burbank has been confused and substituted more often than any other potato. Every potato that chanced to be elongated, regardless of its quality or flavor, has been shipped as Burbanks, until that variety is oftentimes despised. I believe that the solution of this question is being worked out by the various State Associations in their effort to standardize the potatoes within their territory.

The second problem, that of standardizing grades, is much more difficult to solve. The potato market today is much like the butter market was twenty-five years ago and the country merchant paid the same price for good or bad butter. I believe that, in many cases, the farmers who bring good stock to the market are not getting what it is worth, but, on the other hand, there are many loads now bringing more than they are really worth. With a level price there is no incentive for the farmer to sort his potatoes when the fellow with the poor potatoes receives equal returns.

Now I believe that the majority of the buyers would be only too willing not to buy the poor potatoes even at a low price, and it would be an easy matter to get the good buyer to agree to reject them altogether, but just as long as they are raised they will be sold.

If the good buyers would refuse to buy the poor stock that would not solve the difficulty, as some curb stone buyers who had no reputation at stake would buy them for a low figure and the good buyer would find them in competition at the other end.

It is true that good, well sorted potatoes will sell at a premium over poor ones, but the poor ones certainly have a depressing effect upon the market. For instance, if the poor car load were offered for forty cents, the good car load might bring fifty or fifty-five cents, but had it not been for the influence of those forty cent potatoes the good ones would have brought sixty, seventy or seventy-five cents. So every load of poorly sorted potatoes that goes on the market helps to lower the price of the good ones.

The farmer does not believe that he is dishonest, but thinks it is just business. If he is able to get fifty bushels of small or scabby potatoes in a car he is getting paid for them and it is all in the game. But, does the farmer get paid for the potatoes that are unfit for use? I think not. The price of potatoes is based upon the number of potatoes in the car that are unfit for use and the average car load of potatoes that goes upon our market contains close to fifteen per cent, or seventy-five bushels, that should have been left on the farm where they have a feeding value of ten or fifteen cents per bushel. Instead of this, the farmer pays freight on them to the terminal markets, pays for sorting in a great many instances, and he gets what is left.

## A Proposed Reorganization of the National Potato Association of America

Letter submitted by WILLIAM STUART  
U. S. Department of Agriculture.

At the last annual meeting of the National Potato Association of America held at Grand Rapids, Michigan, December 1-3, 1915, a committee was appointed to prepare a plan for reorganization

of the association. The personnel of this committee was so constituted as to represent the various activities connected with the potato industry; the members of the committee and the activities they represent are as follows:



WM. STUART  
U. S. Department of Agriculture

C. W. Waid, East Lansing, Mich., chairman.

H. E. Horton, Chicago, Ill.; Agricultural and Industrial agents.

E. Percy Miller, Chicago, Ill., potato dealers.

J. G. Milward, Madison, Wis., Potato Growers Association.

H. J. Wheeler, Boston, Mass., Fertilizer Industry.

D. E. Willard, St. Paul, Minn., Transportation.

E. B. Mumford, East Lansing, Mich., County Agents.

W. A. Orton, Washington, D. C., Pathologist.

Wm. Stuart Washington, D. C., National Association.

While as yet this committee has not actually met, a tentative plan has been submitted by Chairman Waid, in which the name of the National Potato Association of America is recommended to be changed to that of the North American Potato Council.

The principal change advocated is that of abandoning the idea



of holding annual meetings at which a regular program of addresses is provided, and at which the discussions are of a general rather than a specific nature, for one which shall partake of the nature of conferences upon special subjects. It is proposed to handle the work of the organization in so far as it is possible by sectional committees, some fifteen committees being provided as against ten in the present association. In many respects the committees suggested are duplicates of those provided for in the present constitution and by-laws, the proposed standing committees being as follows:

1. Market standards and marketing.
2. Potato diseases.
3. Seed improvement.
4. Variety standards and new varieties.
5. Research report.
6. Utilization of surplus stock and culls.
7. Transportation and distribution.
8. Organization and co-operation.
9. Potato contests and exhibitions.
10. Legislation.
11. Soil improvement.
12. Boy's and girls club work.
13. Potato uses and food value.
14. Publications.
15. County agent work.

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## The State Convention Exhibit Special Association Report

*The association secured a good photograph of every feature of the convention exhibit and is enabled therefore through these views and descriptions to illustrate every feature of potato development work in the state.*

*The state convention and exhibit each year marks the close of a season's work, which now represents all the important potato growing counties of the state. In addition to the competitive exhibits, the educational exhibits and special demonstrations have proven especially valuable features.*

*The association therefore recommends a very close examination of the following pictures and brief review of awards on competitive exhibits.*

### COUNTY AWARDS.

Three judges scored the county booth exhibits, using a score card prepared by the association. The judges acted independently of each other in order that three separate sets of scores might be secured. Prof. C. L. Fitch of Iowa, Mr. C. W. Waid

of Michigan and Mr. C. E. Brown of Minnesota scored the county exhibits.

Mr. E. S. Brigham, commissioner of agriculture for Vermont, judged the separate variety classes exhibited in association boxes. Following are the average scores of each of the county booths.

	Average score
1. Oneida county.....	93 $\frac{1}{2}$
2. Waupaca county.....	89 $\frac{2}{3}$
3. Wood county.....	89 $\frac{1}{3}$
4. Lincoln county.....	88 $\frac{2}{3}$
5. Barron county.....	85
6. Langlade county.....	84 $\frac{2}{3}$
7. Marinette county.....	84 $\frac{1}{2}$
8. Forest county.....	83 $\frac{1}{4}$
9. Sawyer county.....	80 $\frac{2}{3}$
10. Dunn county.....	80
11. Oconto county.....	78 $\frac{1}{2}$
12. Taylor county.....	76 $\frac{1}{2}$
13. Rusk county.....	72 $\frac{2}{3}$

The award as made above was placed on the merits of potatoes exclusively. Design or arrangement of booth did not enter into the scoring.



**One Rural New Yorker Section**

Over seventy-five entries in this one class alone—the view shows select stock—packed uniformly in  $\frac{1}{2}$  bushel boxes, representing every potato growing section of the state.

A separate award of an Association Silver Cup was made on Design of Booth and Arrangement. This award was given to Oneida county.

CLASS I—INDIVIDUAL VARIETY ENTRIES.

*Rural New Yorker*—1st prize, F. S. Campbell & Sons, Three Lakes; 2nd prize, Ed. Kringle, Rice Lake; 3rd prize, Emil Kapitzke, Weyauwega; 4th prize, G. P. De Busman, Augusta; 5th prize, Erick Mickelson, Pembine; 6th prize, Anton Follstad, Elcho; 7th prize, C. N. Christensen, Waupaca; 8th prize, Max Knolmuller, Rhinelander; 9th prize, Adam Guenther, Antigo; 10th prize, Schroeder Bros., Antigo.



Section Showing Green Mountain

Competition is also very keen in this class. Attention is especially directed to the very limited number of varieties shown in these views. In this respect the exhibit illustrates the community center work under development in Wisconsin potato centers.

*Green Mountain*—1st prize, J. F. Hauser, Bayfield; 2nd prize, C. Jensen, Heafford Jet.; 3rd prize, Walter Schmidt, North Crandon; 4th prize, R. N. Clark, Tomahawk; 5th prize, Wm. Bartlett, Barron; 6th prize, A. C. Boutin, Bayfield; 7th prize, Karl T. Hazelberg, Barron.

*Burbank*—1st prize, Karl T. Hazelberg, Barron; 2nd prize, Ed. Kringle, Rice Lake; 3rd prize, Charles Parsons, Antigo; 4th prize, Wm. Bartlett, Barron; 5th prize, A. E. Turner, Earl.

*Triumph*—1st prize, Erick Mickelson, Pembine; 2nd prize, F. S. Campbell, Three Lakes; 3rd prize, Charles Parsons, An-

tigo; 4th prize, Lewis Winter, Antigo; 5th prize, O. G. White, Amberg.

*Early Ohio*—1st prize, J. F. Hauser, Bayfield; 2nd prize, O. G. White, Amberg; 3rd prize, G. M. Furmell, Summit Lake; 4th prize, W. P. Jewell, Rhinelander; 5th prize, B. Tithworth, Pembine.

*Early Rose*—1st prize, J. F. Hauser, Bayfield; 2nd prize, Henry Blumenstein & Son, Woodruff; 3rd prize, O. G. White, Amberg; 4th prize, John Summ, Antigo; 5th prize, Olaf Anderson, Bayfield.



#### Section of Early Varieties

The standard early varieties shown at the Convention were Triumph Early Ohio, Early Rose and Irish Cobbler. This stock is especially adaptable to the seed trade to southern trucking centers.

*Irish Cobbler*—1st prize, F. S. Campbell & Sons, Three Lakes; 2nd prize, L. N. Nelson, Rice Lake; 3rd prize, Joseph Wright, Antigo; 4th prize, Oscar Nelson, Antigo; 5th prize, John Ralph, Antigo.

*Any Other Standard Variety*—1st prize, J. F. Hauser, Bayfield, on Russett Burbank; 2nd prize, Charles Parsons, Antigo, on Russett Burbank; 3rd prize, F. Kern, Bayfield, on Russett Burbank.

*School Contest Exhibit*—1st prize, banner awarded to Langlade county.

*School Contest Exhibit on Rural New Yorker*—1st prize, Leonard Parsons, Antigo; 2nd prize, Lawrence Guenther, Antigo; 3rd prize, Faye Ruka, Phillips; 4th prize, Anton Opickka, Antigo; 5th prize, Harry Guenther, Antigo.

*School Contest on Green Mountain*—1st prize, Alice Clark, Tomahawk.

## Seed Potato Certification—Special Advertising List

*In another part of this bulletin the reader will find a complete description of the work of seed potato certification and its organization. Every agency concerned in Wisconsin desires that this work shall be permanent in its relation to the growing of standard seed.*

*Most of the growers who will receive certificates this year are members of the Wisconsin Potato Growers' Association. The association knows that the general run of this stock is of high quality and we are therefore especially pleased to commend careful consideration to the listings found in this bulletin.*

### CLASSIFIED SEED POTATO ADVERTISEMENTS

#### GROWN IN FOREST COUNTY.—

North Crandon Potato Growers' Association offers 1000 bushel Rural New Yorker; 100 bushel Russett Rural; 200 bushel Peerless Certified. Write for prices. J. D. Grandine, Secretary.

**FOR SALE**—Certified Rural New Yorker Seed Potatoes, \$1.25 per bushel. Write Gust Kringle, Rice Lake, Wis., Route 1.

**CHOICE RURAL NEW YORKER SEED POTATOES.**—Golden glow yellow dent seed corn—grown by the "Ear to the Row" method. High grade Guernsey bull calves. Write O. C. Woodard, Weyauwega, Wis.

**OHIOS, RURALS AND GREEN MOUNTAINS.**—A little better seed at a little better price. Satisfaction guaranteed, G. M. Sheldon, Tomahawk, Wis.

**HILL SELECTED RURALS.**—Have for sale limited amount of hill selected certified seed stock, absolutely pure Rural New Yorker potatoes. Chas. Beard, Elcho, Wis.

**SEED POTATOES.**—Certified Rural New Yorker. Write Fred Nelson, North Crandon, Wis.

**GROW BUMPER CROPS.**—Sow Wisconsin Pedigree White and Yellow Kherson earliest American oats, wheat and barley. Circular. H. E. Kruger, Beaver Dam, Wis.

### CERTIFIED BURBANK SEED POTATOES.

Won first prize at Barron County Fair, N. W. Wisconsin State Fair, Wisconsin State Potato Show. Second prize at National Potato Show, \$1.25 per bushel. Write Karl Hazelberg, Barron, Wis.

### PURE CERTIFIED SEED POTATOES

Green Mountain and Rural New Yorker, grown on Sandy loam, free from scab and blight. Fine seed stock for sale in any quantity. Write Peter Peterson, Amherst, Wis., R. F. D. 2, Box 107.

### 800 BUSHELS CERTIFIED RURAL NEW YORKER SEED STOCK.

Careful field selection practiced, stock now stored under ideal conditions. Write for prices. Mrs. G. P. De Bussman, Augusta, Wis.

**RURAL NEW YORKER**—State Inspected, certified stock, clean and sound, from well sorted bins.

**TWO FIELDS**—Can furnish seed in car lots. Write O. A. Crowell, Almond, Wis. and J. B. Cook, Almond, Wis.

**T. H. COCHRAN COMPANY**, Portage, Wis. Shippers of high class Seed and Table Potatoes. All standard varieties. Prompt attention given all inquiries.

**GENERAL ADVERTISEMENTS PARTLY IMPROVED FARMS** Near Tomahawk, for sale cheap and on easy terms. Finest potato soil. Write your wants, G. M. Sheldon, Tomahawk, Wis.



#### **Oneida County Exhibit—First Place**

For two years in succession Oneida County has won first place at the state show. Elsewhere in an article submitted by Mr. W. D. Juday an account is given of the intensive field work which has been done in Oneida County in preparation for this exhibit.

The Oneida County booth was arranged to give especial emphasis upon the Green Mountain variety, which has been chosen as a leader for standard late stock in county development work. The Rural New Yorker has been selected by a smaller number of growers but high quality stock of this variety was also shown in the booth.

The Triumph, a standard Wisconsin early seed variety was featured as being adapted to the new potato soils of Oneida County. The Irish Cobbler is grown on a limited acreage—also as a special seed variety.

Therefore through the excellent judgment used in the display of varieties in percentages representing potato development work in the County, this booth served as an excellent example of "Variety Standardization" now under development in Wisconsin.

## **CAMPBELL FARM**

**F. S. Campbell & Sons**

**ONEIDA COUNTY**

**THREE LAKES - - - WISCONSIN**

**Growers of Pure Bred Rurals and Cobblers, Also Triumphs  
and Green Mountains**

Have sold 1000 bushels of seed stock and have nothing more to offer this season. Get in early next year on some of our good stuff. Practically all of our planting will be of Hill Selected seed. Anticipate your wants, and write by September 15 for direct from field shipment.

**WE GROW POTATOES NOT ACRES**

## **Certified**

**Rural New Yorker Seed Potatoes**

**Buy the Best**

**Waupaca County Potato Growers' Assn.**

**Inquire of Secretary**

**Weyauwega, Wis.**

## **Certified Rural New Yorker and Burbank Seed**

**Field Selected and Inspected by the State**

I manage my farm to provide—a limited acreage—intensive cultivation—large yields.

**Clean, Sound Stock Guaranteed**

**PLAIN VIEW STOCK FARM**

**Ed. Kringle**

**R. 1, Rice Lake, Wisconsin**



**F. R. CONSTANCE**  
Proprietor

## **Certified Rural New Yorker a Specialty**

Pedigreed Wisconsin No. 1 Oats, Wisconsin No. 9 Barley, Wisconsin Black Soy Beans, Registered Jersey Cattle, Duroc Swine.

Write

**F. R. CONSTANCE**

**Red Oak Stock Farm  
Waupaca, Wis.**



#### **Waupaca County Exhibit—Second Place**

As in many other counties of the state the potato soils of Waupaca County vary from the sandy loam to the clay loam types. Since the beginning of the potato industry this county has been noted for the high quality stock which is produced on the better grades of potato soil.

Waupaca is an important dairy as well as potato growing County. It is significant to note that in certain extensive areas in Waupaca County—where soil fertility has been conserved by diversified farming—standard varieties, such as the Rural New Yorker maintain excellent vine vigor and yield on land which has been under cultivation for over 25 years.

Therefore Waupaca County growers equipped their booth of the Rural New Yorker variety exclusively. Considering the heavy acreage of fertile soil available—the long experience of successful commercial growers, this work of standardization in Waupaca County will be especially important to the potato industry of the state.



#### **A Green Mountain Section**



## **Dunn County Green Mountain**

Grown by

**HANS TEPPEN**

Colfax, Wis.

I have raised the Green Mountain successfully on one of the best potato soils in the state. Seed stock vigorous. Well sorted. Field inspected.

**All Stock Certified By State**

## **FOR SALE**

500 bushels (about one carload) hand sorted Green Mountain Potatoes (certified seed). Grown in Lincoln county, the home of "The Green Mountain Potato."

Grown upon new ground—free from disease. Prices right.

**Address: F. J. & A. H. SMITH**

Merrill, Wisconsin

## **SEED POTATOES**

**Rural New Yorker**

**Irish Cobbler**

I have practiced field selection for several years. All stock has been inspected by the State and is sold under CERTIFICATE.

**Waupaca County is the Largest Rural  
New Yorker Seed Center in the World**

Write

**GUY C. ANDERSON**

Ogdensburg, Wis.



**Wood County Exhibit—Third Place**

As in the case of Waupaca County only Rural New Yorker was chosen as standard late stock. The potatoes shown in the foreground however were of the Triumph variety. The leading growers and dealers in Wood County are working for an increased acreage of standard stock on the better soils of the county. The quality of the stock in the bins from which this exhibit stock was taken was of the very best quality produced in the state.



**One of the Two Rural New Yorker Sections**



## **4000 Bushels of Seed Potatoes For Sale**

**GUY T. WYCKOFF**

Crivitz, Wisconsin

Grower of Pure Bred Seed Potatoes

**Rural New Yorkers Exclusively**

The largest field certified by the University of Wisconsin to be free from disease and mixture of any kind. My seed was from the seed which took first prize at the Wisconsin Potato Growers' convention in 1914 and 1915 and first prize at the United States show at Grand Rapids, Mich., in 1915.

**WRITE FOR PRICES**



#### Lincoln County Exhibit—Fourth Place

The sign in the picture "The Home of The Green Mountain" suggests a condition which has been noticed by many of the older potato growers of Lincoln County, namely: this variety seems especially well adapted to the better grades of sandy loam soil in the county.

The Green Mountain may have been introduced into Lincoln County originally by settlers coming from the southern part of the state. It was grown for several years under the name of Carman. The potato extension service has found this condition true in most every section of the state. The very best stock of the standard varieties now grown especially of the Rural New Yorker and Green Mountain variety have been grown to a high degree of perfection on both the old and new soils of the state under various names for many years.



#### Wisconsin Exhibit at the National Potato Show, Held at Grand Rapids, Mich., December, 1915

Wisconsin won first prize over all competitors in the state class. Wisconsin Growers also entered potatoes in the Rural New Yorker, Green Mountain, Burbank, Russett Burbank and Triumph classes and carried off a very large percentage of the prizes in these classes.

The potatoes shown were taken from the exhibits shown at the Wisconsin State Convention, furnished by Langlade, Lincoln, Oneida, Waupaca, Forest and Wood counties.

**W**E want Wisconsin growers to know that we are much interested in the movement to improve the quality of Wisconsin potatoes.

**T**HAT we feel that their interests are identical with ours in this and other respects,

**A**ND that further, we shall be glad to do what we can to assist the movement in any way, and

**T**O establish markets in every community to the end that the growing of good potatoes throughout the state may be encouraged.

**Albert Miller & Co.,**

Ogden Bldg., Chicago



## WISCONSIN POTATO GROWERS

If your potatoes are one variety and the good grade we are all working for in Wisconsin, get the good price you are entitled to, as a good grower. Write or telephone our Wausau office when ready to sell or ship to the market.

**Cereal Mills Company, Wausau, Wis.**

We Buy  
**POTATOES    HAY    GRAIN**  
—AT—

Oconto Falls	Shawano	Thornton
Sugar Bush	Clintonville	Marion
Birnamwood	Marathon City	Marshfield
Sparta	Fenwood	Wausau

Our Chicago Salesman:

**GEO. L. HOOKER**

327 S. LaSalle St., Chicago, Ill.

**Just Drive—Let The Aspinwall  
Do All Your Potato Planting**

ONE man and the Aspinwall plant 5 to 8 acres of potatoes a day—and plant them right. Machine opens furrow, drops seed—any size—any distance, covers, marks next row, and if desired, sows fertilizer all in one operation. Corn, Pea, and Bean planting attachment furnished when wanted.

**Aspinwall Potato Planter**

60,000 Users. World's Oldest and Largest Makers of Potato Machinery. Will answer personally any questions on Potato Growing. Write for free booklet.

**ASPINWALL MANUFACTURING CO.**  
511 Sabin Street Jackson, Michigan  
Cutters, Planters, Sprayers, Diggers, Sorters.





**Langlade County Exhibit—Sixth Place**

Two years ago this County, under the leadership of the County agent, organized the Langlade County Potato Growers' Association.

The Rural New Yorker has been selected for the leader in county development work. The fertile clay loam soils of Langlade County seem especially adaptable to this variety.

The County exhibit shown feature a very high quality display of Rural New Yorker mainly. A large number of commercial growers in Langlade County entered in the various classes and in addition to the Rural New Yorker showed Burbank, Russett Burbank and Irish Cobbler.

**Twenty-Five Wisconsin Counties Are Now In Position to Furnish Exhibits of the Standard Varieties Shown In These Pages**

We naturally look forward to the coming convention at Eau Claire. Eau Claire is within 150 miles of every important commercial potato center of Wisconsin and is directly adjacent to an extensive potato growing area.

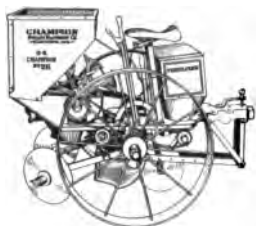
Association work has now reached every important potato growing county of the state.

Plans for field work in the interest of the coming convention are now under arrangement.



## O-K Champion Potato Machines

We make three styles of planters. Automatic cup feed, two man 100 per cent cup and dial feed and the picker type herewith illustrated.



Our Four-Row Sprayer has stood the test of time and will please you. Our three sizes of diggers are well known and used



in every state of the union with best results.

Send for our catalogue. Address

# Champion Potato Mchy. Co.

65 Chicago Avenue

Hammond, Ind.,

## OWOSSO FIELD CRATE

The most practical and economical field crate for handling potatoes. Just right for storing seed stock.



This crate is being used successfully by many of the largest and most progressive potato growers in the country.

It is made of Michigan hardwood. Will stand up under excessive rough handling. Holds full bushel. Write for free sample and prices.

## OWOSSO MANUFACTURING COMPANY

Owosso, Michigan, U. S. A.



#### **Marinette County Exhibit**

Commercial potato interests have invested heavily in Marinette County. Several important potato centers are under development.

A County organization was formed in the interests of the state convention and this association directed the work of the County exhibit.

As a result of the convention held at Marinette an increased interest is manifest in potato improvement work. A good supply of certified Rural New Yorker Seed Stock from Marinette County was on display at the convention exhibit and at business houses in the city.

#### **An Example of Efficient Seed Potato Distribution**

We are pleased to report that Boerner Bros. Mercantile Co. of Port Washington have purchased a car of certified Rural New Yorker seed stock and will distribute this seed to farmers in the community at actual cost price.

This region north of Milwaukee and extending into Fond du Lac County is one of the important Rural New Yorker centers of the state. Several shipping points have established a good reputation for quality stock in past years.

The need of clean, sound seed stock is recognized in many communities. The State Association is especially pleased to commend this kind of seed improvement work and we could cite many such instances of co-operation for mutual benefit between mercantile and farming interests.

# BOGGS POTATO GRADERS

## Five Different Designs



Endorsed by small and large growers, dealers, exchanges and associations from Maine to Florida and as far west as Idaho.

Something new. Different from all others. Quality and quantity of work unequalled.

**Only Belt-Over-Belt Machine Manufactured**

**Built for Business**

**Lasts a Lifetime**

**Frank Boggs, Mfr., Atlanta, N. Y.**

## Potato Growers, Attention

Did you know **Paris Green** will cost you about **50 per cent more this year than last?**

**Rex Arsenate of Lead**, either in paste or powdered form is cheaper even in normal times than **Paris Green**, and equally as effective in killing potato beetles.

Tests prove this statement.

Ask your state experiment station officials for verification.

Write us direct for details, prices, etc.

Tell us how many acres of potatoes you plant.

**The Toledo Rex Spray Company**

**Toledo, Ohio**



#### Forest County Exhibit

The two varieties especially featured in this exhibit were the Rural New Yorker for late and the Triumph for early. This is another illustration of the concentration upon a restricted number of varieties. The newer counties of the state are in excellent position to begin right in this work. Commercial interests are well represented in Forest County work. Under the direction of the County agent, John Swenhardt, organized potato work has been very successful in Forest County.



#### Dunn County Exhibit

This was the first year Dunn County has equipped a booth at the State Convention.

Colfax in Dunn County is one of the important potato shipping points of Wisconsin.

Through the co-operation of the dealers and growers in Dunn County a large amount of pure seed was distributed in 1915. Mr. Hans Tepen and Martin Fruvog—both large growers—were in charge of Dunn County Exhibit.

# Quality

In Wisconsin Potatoes

Secured Through

## Sorting and Grading

---

We continually urge upon our loaders the closest co-operation with every agency in Wisconsin in the interest of better grading of car shipments.

Our extensive interests in Wisconsin—our identification with the potato industry in the state from its beginning—and our **experience** as **growers** and **dealers** lead us to predict a very bright future for Wisconsin potatoes in competing markets.

---

# L. Starks Co.

Growers and Shippers of Potatoes  
Ogden Bldg., Chicago, Ill.



#### **Sawyer County Exhibit**

Another new County where important potato growing interests are fast coming under development.

Foundation seed stock of the right kind can now be found in Sawyer County and the association can predict a very bright future for potato growing in that section.

#### **Potato Grading Investigation**

One of the important addresses delivered before the Iowa State Association meeting held at Clear Lake, Iowa, last December, was on "Potato Grading Investigation," by Mr. C. T. More of the Bureau of Markets, U. S. Department of Agriculture.

At the request of the secretary, Mr. More furnished a summary of this address for publication in this report but through a misunderstanding it reached us after the page forms had closed.

This department has done some valuable work and we will make special arrangements to publish Mr. More's article in the state press.



## PREPAREDNESS

Men may differ about preparedness for war, but all of us believe in preparedness for old age for a GOOD HOME. It is preparedness that sends the runner over the tape ahead of his rivals. It is preparedness that enables the manufacturer to outdistance his competitors. It is preparedness that has made many Happy Homes, in getting located properly. It is in the KENNAN SILT LOAM DISTRICT, KENNAN, WISCONSIN, where farmers are making good. We have many fine 40A—80A—160A and larger tracts to please you, on terms that will suit you, with prices that are right. On good roads, near good schools. Write us for further information. Ask for the card "Why Farm."

**HUGO KANDUTSCH & CO.**  
Kennan, Wis.

**440 Bu. Per Acre**  
**OLDS' NEW POTATO** **WHITE MAMMOTH**

Yielded 440 Bu. per Acre in Sawyer County, Wis., and 325 Bu. per Acre at Ohio Experiment Station. A new, main-crop, heavy-yielding white potato of the Green Mountain type with a thickly netted skin. Excellent flavor.

### Olds' 96-Page 1916 Catalog

tells all about this and other varieties of potatoes. Also corn, oats, wheat, clover, alfalfa, garden seeds, etc. 28 years' experience. Write today. Ask for "FREE Sample Collection" 10 leading field seeds. Address L. L. OLDS SEED CO., 43 Olds Bldg., Madison, Wis.

**Olds' Scotch Rural**  
**350 Bushels Per Acre**

A main-crop, Rural type potato of new blood, smooth, not overgrown, good cooking and good tasting.

**Yields Twice as Much**  
as Rural and other standard varieties. Not affected by blight, drouth or bugs.

**Olds' 96-Page Catalog** gives full description and prices of this and other varieties potatoes, field seeds, garden seeds, etc. Ask for our **FREE Collection Field Seeds**. Write today.

**L. L. Olds Seed Co.,**  
43 Olds Building  
Madison, Wisconsin



#### **Oconto County Exhibit**

Oconto County also exhibited at the State Convention for the first time at Marinette.

A local association has been formed at Oconto. Standard seed has been distributed in the County. There is every indication that potato growing will develop steadily in Oconto County.

#### **Wisconsin Prize Winners at the National Potato Show**

As announced elsewhere in this bulletin, Wisconsin won first place at the National Potato Show held at Grand Rapids, Michigan, in December.

Following is a list of Wisconsin growers who won premiums in the separate variety classes:

**On Irish Cobbler**—F. S. Campbell & Sons, Three Lakes; F. F. Boehm, Rhinelander; Charles Peterson, Rhinelander; C. Parsons, Antigo.

**On Burbank**—C. Parsons, Antigo; Karl Hazelberg, Barron.

**On Russett Burbank**—C. Parsons, Antigo; John Summ, Antigo.

**On Green Mountain**—E. M. De Long, Woodruff; Albert Radtke, Rhinelander; John Frawley, Irma.

**On Rural New Yorker**—Emil Kapitzke, Weyauwega.



# Homestead Farm Guernseys

Choice young registered bulls for sale. Sired by

**"Governor of the Chene"**

Also from high producing dams, mostly A. R., or cows  
now on test.

**Records Up to 566 Pounds Fat**

Also high producing grade Guernsey cows at reasonable price. Herd numbers 60 head. Visitors always welcome at my farm and inquiries cheerfully answered.

## W. G. Jamison & Sons

Appleton, Wis.

### W. E. WEBSTER, Hudson, Wis.

has some choice improved farms and some very fine unimproved land for sale right in the best potato belt in Wisconsin. Write and tell him just what you want, what terms you would have to have, and he will send you his little booklet with full particulars.

### Buy a Ready Made Farm

We will sell you farm land in Rusk County, Wis., build a house and barn, furnish cows, pigs and chickens.

Good roads, schools, rural routes. Rich clay loam soil.

**\$250 TO \$500 CASH**

Balance long time easy payments. Send for map and Ready Made Farm Plan.

## FAAST LAND COMPANY

CONRATH, WIS.



#### **Taylor County Exhibit**

For the past two years some of the very best Rural New Yorker stock shown at the State Convention has come from Taylor County.

Mr. R. Kolb, the County agent, is directing the work of potato improvement in the County.

#### **Examine These Exhibit Views Carefully**

Please note that in addition to showing select stock—fancy stock—exhibited as an ideal, these exhibits also aim to show Wisconsin potatoes as they grow.

It is desirable that such proposals as are made on sorting and grading—disease control—fertilization, etc., shall be met in the light of actual field conditions and available experience. The State Convention is now the most important agency in Wisconsin in assembling these interests.

**After careful examination of these pages send on your criticism and suggestions for the 1916 Convention and exhibit.**



## 9 Lbs. Potatoes in One Hill

Rhineland, Wis., Dec. 31, 1915

Swift & Company,  
Chicago, Illinois

Gentlemen:—The big hill in the foreground had nine pounds of potatoes in it and I have this fine hill all by itself down in my cellar. That is the kind of hills from which to select seed.

These hills averaged four pounds and were yielding at the rate of 600 bushels per acre. I am getting \$3.00 per bushel for this fine stuff. I used Swift's Fertilizer, as it has been my experience that my best potatoes come from the fertilized portions of my fields.

Yours very truly,

E. L. LUTHER,

## Good Seed and Swift's Fertilizer

Together with suitable soil and favorable weather are what you need to grow big crops of finest quality.

Profit by the experience of others and use Swift's Fertilizer on your crops next spring.

## Swift & Company

U. S. Yards, Chicago

*Live Agents Wanted in Unoccupied Territory*

**Use The Coupon**

SWIFT & COMPANY  
Fertilizer Dept., Desk A.  
Chicago, Illinois

Please send me prices and other information about Swift's Fertilizer.

Crop \_\_\_\_\_ My Soil is \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_



#### **Rusk County Exhibit**

The exhibit shown was a very high quality display of Green Mountain, grown by Mr. C. P. Coon of Bruce.

The Green Mountain is apparently well adapted to the sandy loam lands of this County. On the clay loam soils the Rural New Yorker is the prevailing variety.

#### **Special Potato Institutes For Central Wisconsin**

As this Bulletin goes to press arrangements have been completed for a series of ten special potato institutes to be held in Central Wisconsin under the auspices of the office of Farm Institutes.

President J. W. Hicks, who has represented potato work on the Farm Institute force, will conduct these meetings.

Superintendent E. L. Luther announces the following schedule:  
March 20, Necedah; March 21, Arkdale; March 22, Grand Marsh;  
March 23, Endeavor; March 24, Westfield; March 27, Coloma;  
March 28, Bancroft; March 29, Wild Rose; March 30, Plover;  
March 31, Amherst.

## YOU NEED A CAMERA

Every day you are without a camera you are missing much. Think of all the things about the farm—the pet horse, a spring planting scene, a family gathering, and a thousand other pictures you will like to remember the place, people, and things by in the years to come.

Send us only \$2.40 for a complete Eastman Premo Camera including a pack of films to make twelve pictures. We teach you by mail how to take pictures and develop and print. We have many other models also. Send for complete catalog.

The photographs of convention exhibits—shown in this bulletin—will commend our work to you.

*Expert Kodak Finishing by Mail*  
*Send for Prices*

### The PHOTOART HOUSE

WM. J. MEUER, Pres.

Madison, Wis.

The Biggest Retail Photo House in Wisconsin

## ALL HALF-TONES

Shown In This Bulletin Were Made by the

# S. P. ENGRAVING COMPANY

Half Tone  
Zinc Etching  
Wood Engraving

Milwaukee, Wis.

Designing  
Electrotyping  
Copperplate Printing

## A Five pound Rusk Farm Cheese A Full Cream American Cheese

**DIRECT FROM FACTORY TO YOU**

A select family size carton (5 lb.) of real choice American Cheese will be sent you by **parcel post** at low cost.

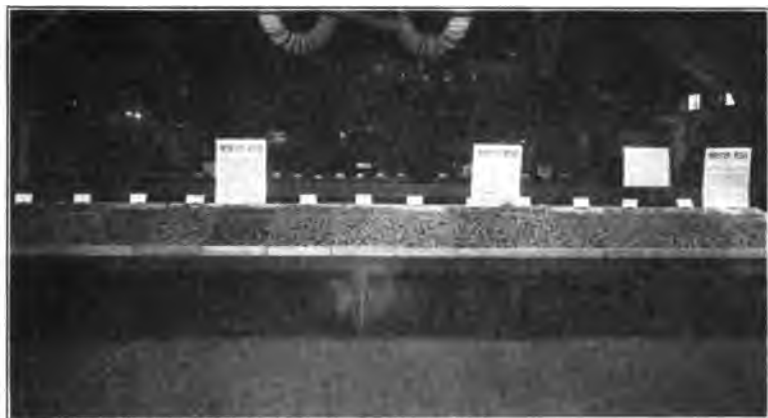
**Save money and buy direct from the factory.** Send for circular and price list today.

## RUSK FARM COMPANY

Cheese Dept.

Eau Claire, Wis.

## Non-Competitive and Educational Exhibits



### Certified Wisconsin Seed Potatoes Exhibited as They Grow

The State Potato Inspection Service arranged this exhibit to demonstrate actual conditions found in certified seed potato bins. The exhibit was a success in this respect. The discussion aroused plainly shows that a large percentage of people do not have a clear understanding of the appearance of seed and table stock as it can be produced commercially under good conditions of culture. This phase of the exhibit will be given considerable attention at the next exhibit.



### Certified Potatoes In Standard Packages

The Inspection Service desires to maintain a high standard under the certificate and to keep this standard consistent with commercial potato growing. The reader should secure the Experiment Station Bulletin on "Seed Potato Certification."

# 250 Bushels of Potatoes per Acre Instead of 70 Bushels

Mr. Guy Anderson, Ogdensburg, Wisconsin, obtained a yield of 250 bushels per acre by using

## *Armour's Fertilizers*

An unfertilized tract in same field yielded only 70 bushels per acre.

Armour's fertilizers enrich the soil, increase the yield, improve the quality. Write for circular.

### ARMOUR FERTILIZER WORKS

U. S. Yards, Chicago

## Saves Potato Seed

THIS year seed will be scarce and high—every bushel will count. The 1915 U. S. crop was nearly sixty million bushels short. Potash will be practically impossible, but some of the best experts recommend 4-10-0 fertilizer without potash. Less acres, better planting and as good fertilizer as you can get will be the rule of the best growers.

### *IRON AGE* 100 per cent Potato Planters

save 1 to 2 bushels of seed per acre by planting one seed piece in every space and one only. Costs no more to cultivate, spray, weed and ridge a perfect stand. Make every seed piece count and every foot of ground. Our other potato machines include *Riding and Walking Cultivators*, four and six row *Sprayers*, *Potato Diggers*, *Ridgers* and *Weeders*.

Ask your dealer to show them but write us for separate book for each line. Sent Free to all who state in which they are interested. How many acres are you going to plant?

**Bateman Manufacturing Co., Box**

**Grenloch, N. J.**

We also make *Garden Tools* for practical farmers and *Sprayers* of every kind.



100 Per Cent  
Planter



Weeders



Riding  
Cultivator



Potato Sprayer  
4 or 6 Row



Potato Ridger

With Disks If  
wanted



Potato  
Digger

With  
Engine  
If wanted

Represented by **GALE MFG. CO.**

205 Oregon St., Milwaukee, Wis.

Ask Them For the Address of Their Nearest Dealer Connection



#### Potato Disease Demonstration Booth

Since the beginning of Wisconsin potato conventions this feature has been a constantly increasing success. Competent attendants from the Wisconsin College of Agriculture have been in charge. It is an excellent opportunity to review the season's work in its many relationships—on Common Scab, Rhizoctonia, Late Blight Rot, Blackleg, Control Measures, etc.

#### Certified Seed Stock Should Be Planted In Wisconsin This Year

Notwithstanding a season when late blight rot did serious damage, some of the finest seed stock ever grown in the state is now in storage.

A large amount of this stock was harvested from sandy loam areas where rot conditions were not serious. Some of the stock is entirely free from rot.

Each year a large amount of money is wasted in Wisconsin on mis-directed seed potato investment.

The Association stands back of every movement to place the seed potato trade of Wisconsin on an honest and practical basis.

It would seem a mistake for the state to spend one whole season in co-operation with growers on seed potato improvement and then fail to get this matter before the potato growing interests.

The work has been done. This Bulletin is intended to urge Wisconsin interests to take advantage of the seed stock now available.



# **A Special Edition Of This Bulletin Will Be Run**

**Attention Commercial and Educational  
Interests—Farming and Mercantile  
Companies—**

Special arrangements can now be made to secure  
this Bulletin at \$7 per hundred; \$70 per thousand.

**Orders Must Be In By April 10, 1916**

Address Secy. Wis. Potato Growers' Assn.  
Madison, Wis.

## **The Wisconsin Potato Conference**

**Held at Eau Claire on March 15**

**Resulted in complete organization in the interest of the coming  
State Convention and Exhibit**

**To be held at Eau Claire, Nov. 21-24, 1916**

A conference of thirty-five representative men met the Civic and Commerce Association and Bankers Committee of Eau Claire, and completed preliminary arrangements and appointed local chairmen of committees as follows:

**On Arrangements**—Sec'y R. F. Kaiser, Civic and Commerce Assn.

**On Finance**—W. S. Woodruff, Bankers Committee of Eau Claire.

**On Transportation**—Geo. Wallace, Freight Agent Omaha Railroad.

**On Publicity**—W. L. Swift, Eau Claire Press Association.

Field work is now in progress in twenty-five Wisconsin counties in preparation for the convention. For general information write **Sec'y Wis. Potato Growers Assn., Madison, Wis.**



#### Potato Sorting and Grading Demonstration

In connection with this exhibit the association secured samples of potatoes taken from cars and commission houses in Chicago, showing field frost, rot, scab, and other troubles arising in part from careless sorting on the farm and at loading stations.

The actual handling of stock *As It Grows* is shown in the picture. All potato interests recognize the need of state-wide attention to this work. Examine special articles on Potato Marketing.

#### A Special Report Will Be Made at the 1916 Convention on Investigations and Proposed Legislation on the Manufacture of Industrial Alcohol, Potato Flakes, Potato Flour and Other Potato Bi-Products

Dr. H. E. Horton, of the American Steel and Wire Co., Chicago, delivered an interesting illustrated lecture before the Farmers' Course held at Madison in February on the above subject. Dr. Horton showed slides illustrating the processes of alcohol and potato flake manufacture now under successful operation commercially in Germany.

Wisconsin growers naturally ask: What application can now be made in America of these investigations especially as affecting the potato industry in the Northwest? This will make one interesting subject at the 1916 convention.

# *Here Is the Solution To Your Potato Spray- ing Problem*

With the price of Copper Sulphate where it is today—and advancing. With the acid markets up in the air and Paris Green correspondingly high in price—since it is composed largely of Copper and Arsenic—your potato spraying problem is a serious one this year. Your solution to this problem is

## **SHERWIN-WILLIAMS DRY POWDERED TUBER-TONIC**

TUBER-TONIC is a dry powdered insecticide and fungicide, made especially for potato work. It has the quick killing properties of Paris Green—the sticking qualities of Arsenate of Lead and the fungus preventative merits of Bordeaux.

TUBER-TONIC is your “best bet” for potato work this year. Its effectiveness is practically equivalent to straight Paris Green. From  $1\frac{1}{2}$  to 3 pounds to 50 gallons of water will do the work—dependent on climatic conditions.

Write us today and let us tell you more about FUNGI-BORDO or our other Insecticides if you are interested.

## ***The Sherwin-Williams Co.***

***Insecticide Department***

***Chicago, Ill.***

***Cleveland, Ohio***

**"Corona Dry" Used Here      "Corona Dry" Not Used Here**



## You or the Bugs?

Are you going to get the fruit and vegetables out of your garden—or are you going to let the bugs and worms have half?

Bug-killing is just as important as seed-planting and cultivation. The commercial orchardist or gardener knows this and uses insecticide regularly. You can do this too, now that

## "CORONA DRY"

### *The Universal Insecticide*

—patent arsenate of lead, is sold in small packages for the benefit of the small grower. No expensive equipment is needed. This most efficient bug-killer and preventive is applied dry—in dust form—without the use of sloppy, costly spraying apparatus.

Don't let insect pests rob you of the pleasure—and the profit—of using fine, unblemished fruit and vegetables, **raised on your own place.**

Use "Corona Dry" first—before the bugs start to eat your growing things. Get it where you buy your seeds. If your garden is small, dust on "Corona Dry" through a cheese-cloth bag or small bellows. For larger plots we advise using the Corona Hand Duster. Ask to see it when you buy "Corona Dry." Your address on a post card will bring at once free copy of our 20-page, instructive book, "Garden Pests and Their Control." Send for it today—tells how to get rid of all bugs, worms and plant diseases.

## Corona Chemical Co.

Dept. 000

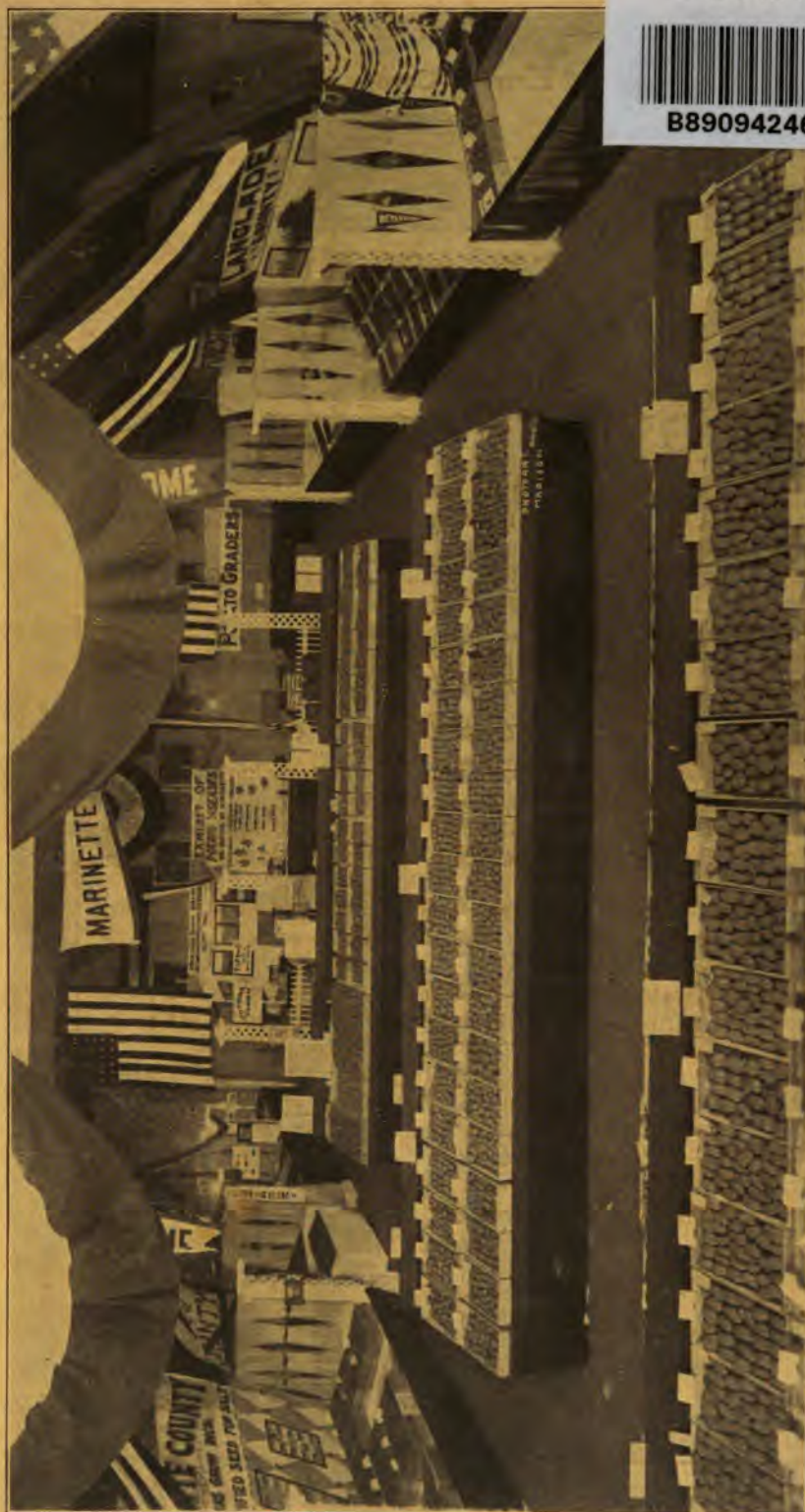
Milwaukee, Wis.



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# LARGEST POTATO EXHIBIT IN AMERICA

Fourth Annual Convention of the Wisconsin Potato Growers Association, Held at Marinette, November